

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

11711
R317A
Cop. 2

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
ANIMAL DISEASE ERADICATION DIVISION
FEDERAL CENTER BUILDING
HYATTSVILLE, MARYLAND 20781

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

FEB 1 - 1965

CURRENT SERIAL SECTION

ANNUAL REPORT
of
COOPERATIVE STATE-FEDERAL
PSOROPTIC SHEEP AND CATTLE SCABIES
ERADICATION ACTIVITIES
Fiscal Year 1964

November 9, 1964

PROGRAM ACTIVITIES FISCAL YEARS 1954 THROUGH 1964

| Fiscal Year | Number of Infected States | Number of Infected Counties | Number of Infected Flocks | Total Inspections | Total Dippings | Public Stockyards | | | |
|-------------|---------------------------|-----------------------------|---------------------------|-------------------|----------------|-------------------|-----------------|--------------|--|
| | | | | | | Infected Lots | Sheep Inspected | Sheep Dipped | |
| 1954 | 21 | 183 | 391 | 5,477,334 | 390,530 | 68 | 13,179,281 | 241,689 | |
| 1955 | 24 | 219 | 442 | 5,587,267 | 391,952 | 72 | 13,447,297 | 242,627 | |
| 1956 | 25 | 267 | 607 | 8,730,299 | 441,713 | 110 | 12,835,044 | 235,488 | |
| 1957 | 24 | 289 | 682 | 11,994,987 | 573,810 | 150 | 12,791,764 | 299,474 | |
| 1958 | 24 | 300 | 726 | 9,500,782 | 356,854 | 206 | 11,626,207 | 341,924 | |
| 1959 | 24 | 276 | 736 | 10,848,946 | 309,609 | 209 | 11,908,863 | 388,450 | |
| 1960 | 25 | 280 | 886 | 10,836,576 | 390,958 | 214 | 12,351,029 | 374,834 | |
| 1961 | 24 | 296 | 872 | 12,031,249 | 506,745 | 187 | 12,304,306 | 350,339 | |
| 1962 | 24 | 316 | 767 | 12,771,677 | 591,231 | 121 | 11,722,578 | 303,196 | |
| 1963 | 21 | 180 | 268 | 15,530,561 | 843,447 | 51 | 9,769,549 | 299,291 | |
| 1964 | 15 | 88 | 126 | 15,528,685 | 343,145 | 10 | 8,509,121 | 155,126 | |

Psoroptic sheep scabies was reported in 126 flocks of 17,944 sheep in 88 counties in 15 States compared to 268 flocks in 180 counties in 21 States in 1963. 10 infected lots were found at public stockyards during fiscal year 1964 and 51 during the previous year. 15,528,685 sheep were inspected on farms during 1964 and 343,145 dipped--compared to 1963 when 15,530,561 were inspected on farms and 843,447 dipped.

SIGNIFICANT PROGRESS MADE

The 126 outbreaks reported during fiscal year 1964 indicate a significant favorable move toward eradication. Approximately the same numbers of sheep were inspected to disclose these outbreaks as were inspected the previous year when 268 outbreaks were reported. The majority of the outbreaks occurring in 1964 were reported by States not yet in the final stages of eradication. However, the program suffered setbacks when outbreaks were reported in Free Areas of New Mexico, Kansas, Pennsylvania, Virginia, Wisconsin, Minnesota, and Nebraska. Of the 126 outbreaks, 7 were reported in the Infected Area, 85 in the Infected-Eradication Area, and 34 in the Free Area.

19 Entire States and Territories and Parts of Two States Succeed in Eradicating Sheep Scabies

When the Accelerated Sheep Scabies Eradication Program began in August 1960, the following States and Territories now considered Free of the disease were classed as Infected: Alaska, Arkansas, Hawaii, Illinois, Kansas, Kentucky, Maryland, Michigan, Minnesota, New Jersey, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Wisconsin, Virginia and the Virgin Islands. Parts of Missouri and Nebraska have also been freed of the disease.

Outside of the area considered Infected in August 1960, outbreaks have occurred, followed by prompt eradication measures, in California, Mississippi, New Mexico, North Carolina and western South Dakota since the beginning of the accelerated program.

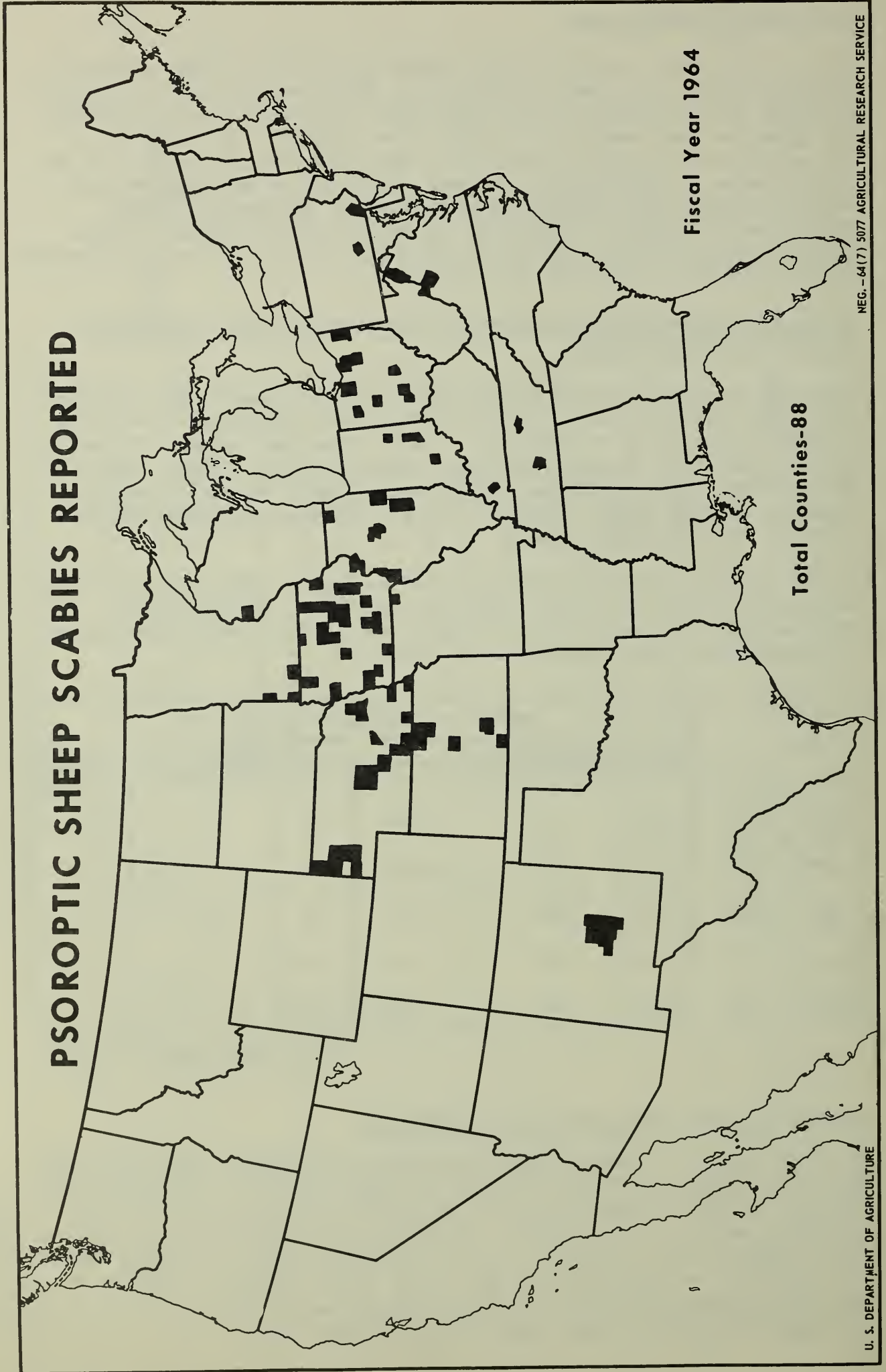
| Date | SHEEP SCABIES ERADICATION | | | | | |
|-------------|---------------------------|-------------|----------|---------|-------------|----------|
| | Counties | | | States* | | |
| | Free | Eradication | Infected | Free | Eradication | Infected |
| August 1960 | 1421 | 44 | 1689 | 27 | 1 | 23 |
| August 1961 | 1432 | 513 | 1209 | 27 | 7 | 17 |
| August 1962 | 1672 | 623 | 829 | 31 | 11 | 12 |
| August 1963 | 2420 | 420 | 314 | 44 | 7 | 4 |
| August 1964 | 2696 | 366 | 92 | 46 | 5 | 1 |

*Includes parts of States

EPIDEMIOLOGY RECEIVES CONSIDERABLE ATTENTION

As the incidence of sheep scabies continues to be reduced, more and more attention is given to intensive study of each outbreak. The eradication program includes enough flexibility to benefit considerably from such studies so that it can be as practicable, efficient, and effective as possible. The attack against sheep scabies is an ever-changing effort to accomplish the goal of finding and eliminating the last focus of the disease as quickly as possible. With these thoughts in mind, summaries of epidemiological work were prepared in some detail and are enclosed with this annual report.

PSOROPTIC SHEEP SCABIES REPORTED



Fiscal Year 1964

PSOROPTIC SHEEP SCABIES - States and Counties Involved

() indicates number of outbreaks

Illinois - Champaign (3), Douglas (1), Hancock (1), Henderson (1), Iroquois (1), McHenry (1), Marshall (1), Rock Island (1), Woodford (1).

Indiana - Decatur (1), Delaware (1), Lawrence (1), Rush (4).

Iowa - Black Hawk (1), Bremer (4), Chickasaw (4), Clayton (1), Franklin (1), Greene (1), Grundy (1), Hamilton (2), Howard (2), Johnson (1), Keokuk (1), Linn (2), Lucas (1), Marion (1), Marshall (1), Monroe (1), Montgomery (1), O'Brien (1), Osceola (1), Pottawattamie (2), Ringgold (2), Scott (1), Tama (2), Winnebago (1), Woodbury (1), Wright (1).

Kansas - Cloud (5), Ellsworth (1), Harper (1), Jewell (2), Republic (1), Sedgwick (2).

Kentucky - Caldwell (1).

Minnesota - Jackson (1), Lincoln (2), Rock (1).

Missouri - Scotland (2).

Nebraska - Adams (1), Banner (1), Box Butte (3), Buffalo (2), Colfax (1), Cuming (1), Custer (1), Dodge (1), Jefferson (1), Merrick (1), Morrill (1), Nuckolls (2), Otoe (1), Richardson (1), Sioux (2), Webster (1).

New Mexico - Lincoln (3).

Ohio - Clinton (1), Fairfield (1), Fayette (2), Lorain (1), Medina (1), Putnam (1), Sandusky (1), Wayne (3), Logan (1), Trumbull (1), Mahoning (1), Seneca (1).

Pennsylvania - Chester (1), Cumberland (1).

Tennessee - Putnam (1), Maury (1).

Virginia - Augusta (4), Highland (1).

West Virginia - Hampshire (1), Hardy (1).

Wisconsin - St. Croix (1).

PSOROPTIC SHEEP SCABIES

| As Reported From Respective States | Number of Infected Counties | Number of Infected Flocks | Number of Infected Sheep | Total Inspections | Total Dippings |
|---------------------------------------|-----------------------------------|---------------------------------|--------------------------------|----------------------|-------------------|
| Alabama | 0 | 0 | 0 | 3,630 | 0 |
| Alaska | 0 | 0 | 0 | 0 | 0 |
| Arizona | 0 | 0 | 0 | *1,836 | 11 |
| Arkansas | 0 | 0 | 0 | 47,459 | 546 |
| California | 0 | 0 | 0 | *811 | 23 |
| Colorado | 0 | 0 | 0 | 423,476 | 16,448 |
| Connecticut | 0 | 0 | 0 | 1,145 | 0 |
| Delaware | 0 | 0 | 0 | 2,813 | 0 |
| Florida | 0 | 0 | 0 | 5,075 | 0 |
| Georgia | 0 | 0 | 0 | *6,734 | 0 |
| Hawaii | 0 | 0 | 0 | 4,000 | 3,900 |
| Idaho | 0 | 0 | 0 | 1,784,033 | 0 |
| Illinois | 9 | 11 | 744 | 474,440 | 107,043 |
| Indiana | 4 | 7 | 121 | 21,727 | 489 |
| Iowa | 26 | 38 | 2,475 | 967,398 | 4,163 |
| Kansas | 6 | 12 | 3,537 | 198,515 | 19,915 |
| Kentucky | 1 | 1 | 112 | 276,042 | 1,359 |
| Louisiana | 0 | 0 | 0 | 101,436 | 21,097 |
| Maine | 0 | 0 | 0 | 0 | 0 |
| Maryland | 0 | 0 | 0 | 29,359 | 0 |
| Massachusetts | 0 | 0 | 0 | *3 | 2,597 |
| Michigan | 0 | 0 | 0 | 22,068 | 302 |
| Minnesota | 3 | 4 | 597 | 280,760 | 2,200 |
| Mississippi | 0 | 0 | 0 | 29,479 | 0 |
| Missouri | 1 | 2 | 421 | *240 | 388,450 |
| Montana | 0 | 0 | 0 | 2,650 ^a | 0 |
| Nebraska | 16 | 21 | 4,863 | 450,917 | 25,087 |
| Nevada | 0 | 0 | 0 | 89,225 | 0 |
| New Hampshire | 0 | 0 | 0 | 0 | 0 |
| New Jersey | 0 | 0 | 0 | 31,999 | 0 |
| New Mexico | 1 | 3 | 2,502 | 1,279,965 | 96,855 |
| New York | 0 | 0 | 0 | 56,184 | 0 |
| North Carolina | 0 | 0 | 0 | *787 | 6,419 |
| North Dakota | 0 | 0 | 0 | 95,309 | 0 |
| Ohio | 12 | 15 | 1,284 | 876,189 | 2,970 |
| Oklahoma | 0 | 0 | 0 | 86,844 | 223 |
| Oregon | 0 | 0 | 0 | *12 | 8,523 |
| Pennsylvania | 2 | 2 | 711 | 211,891 | *24 |
| Rhode Island | 0 | 0 | 0 | 2,670 | 0 |
| South Carolina | 0 | 0 | 0 | 5,802 | 0 |
| South Dakota | 0 | 0 | 0 | 1,118,758 | 936 |
| Tennessee | 2 | 2 | 128 | 33,401 | 1,175 |
| Texas | 0 | 0 | 0 | *545,429 | *120 |
| Utah | 0 | 0 | 0 | *135 | 76,225 |
| Vermont | 0 | 0 | 0 | 776 | 0 |
| Virginia | 2 | 5 | 220 | 167,457 | 1,314 |
| Washington | 0 | 0 | 0 | 44,344 | 26 |
| West Virginia | 2 | 2 | 95 | *2,065 | 242,364 |
| Wisconsin | 1 | 1 | 134 | 108,036 | 1,626 |
| Wyoming | 0 | 0 | 0 | 194,041 | 0 |
| Puerto Rico | 0 | 0 | 0 | 0 | 0 |
| Virgin Islands | 0 | 0 | 0 | *64 | 140 |
| TOTALS: | 88 | 126 | 17,944 | *558,116 | 15,528,685 |
| | | | | | *144 |
| | | | | | 343,145 |

*Goats

a-In addition, 243,335 sheep were inspected by Montana Deputy State Veterinarians at auction markets.

Scabies Slide Kits Prepared and Distributed

A cattle scabies slide kit of 86 color slides and a sheep scabies slide kit of 73 color slides were assembled, duplicated, and distributed to Animal Disease Eradication Division field stations and to veterinary colleges. Accompanying narrations for each of the kits were also distributed.

In addition to serving as narrations for the scabies slides, the accompanying material also serves to summarize national policies for sheep and cattle scabies eradication. In order to develop sound and workable procedures and to recognize existing policies in the various States, field manuals and other materials and instructions from many States were carefully reviewed in an endeavor to correlate and incorporate the information therein into national recommended policies and procedures.

Scabies Training Courses

During the year scabies schools were conducted in Beltsville, Maryland; Reynoldsburg, Lima, Springfield, Hillsboro, McConnelsville, Tiffin and Ravenna, Ohio; St. Charles and Springfield, Illinois; and North Platte, Grand Island, Norfolk, and Lincoln, Nebraska. During the 16 training sessions involved, 682 persons received instruction in the fundamentals of diagnosing the disease, dipping animals, vat management, and in the principles of scabies eradication. This brought the total of persons having received such training to 3,395.

Pertinent Division Notices and Memorandums Issued

ADE Division Memorandum No. 505.13 dated April 21, 1964, "Instructions to be followed in the submission of reports on epidemiological investigations of sheep and cattle scabies outbreaks."

ADE Division Notice of May 20, 1964, "Servicing of ADE Division Water Meters."

ADE Division Memorandum No. 505.1, Supplement No. 1, dated April 30, 1964, "Instructions to be followed in the treatment of cattle and sheep because of scabies--Permitted toxaphene dips."

ADE Division Notice of September 3, 1963, "Water Meters and Vat Management."

Regulations Amended to Provide for Movements of Sheep to Specifically Approved Stockyards

Effective September 5, 1963, Title 9, CFR, Part 74 was amended to include the Director's authorization to approve specific auction markets to receive sheep moving interstate without dipping which would otherwise require dipping prior to such movement. Inspection, handling, and dipping of sheep after arrival must meet established standards.

Alleged Interstate Violations and Results of Prosecutions Relating to 9 CFR, Part 74, Scabies in Sheep, Based on Reports Received in Washington, D.C., Interstate Regulations Enforcement Staff Office

| | |
|--|-----|
| Cases successfully prosecuted | 3 |
| Cases pending with Dept. of Justice and U.S. Attorneys | 2 |
| Cases closed by letters of warning with concurrence of Department of Justice. | 5 |
| Cases declined for prosecution but letters of warning issued to the violators by U.S. Attorneys | 6 |
| Cases declined for prosecution by the U.S. Attorneys. | 1 |
| Cases closed when further investigation disclosed that no violation had occurred | 2 |
| Cases under investigation | .47 |

Increased Use of Maceration-Flotation Procedure for Detecting Scabies Mites

During fiscal year 1964, a practice exercise was conducted to reacquaint experienced regulatory laboratory personnel in all States with the proper method of identifying scabies, mange and itch mites. It also afforded an opportunity for laboratory personnel not familiar with the procedure to develop this capability. 111 practice exercise kits were prepared and forwarded from the ADE Ectoparasite Laboratory, Beltsville, to a like number of locations in 49 States and Puerto Rico. During this practice exercise 96 percent of the participants isolated and identified the mites on initial attempt, and the 4 percent failing to isolate on the initial attempt successfully identified the mites on a retest. As the goal of total sheep scabies eradication nears reality, it becomes more important that each and every outbreak be detected as rapidly as possible. A number of the outbreaks reported during fiscal year 1964 were detected through use of this method when other methods of diagnosis had failed. The procedure is described fully in ADE Division Memorandum No. 505.7 dated April 9, 1963.

Active Laboratory Support

The Division Chemical Reference Center, Technical Services, Beltsville, Maryland, actively supported field activities and quantitative analysis tests were conducted during fiscal year 1964 on samples received as follows: Toxaphene - 2,918, Co-Ral - 91; Lindane - 223; and Ciodrin - 4. Also, 28 series of emulsion stability tests were conducted.

Tissue residue studies were made on 8 tissue samples. Sufficient reagents were prepared to make 17,580 field tests for arsenic and 275 for lime sulphur. 86 samples of cresylic disinfectants were analyzed for compliance with specifications and the following studies and miscellaneous sample determinations were conducted: PH - 27, Soda ash - 3, Nitrogen and phosphoric acid in bone meal - 4, arsenic dip - 1, specific gravity - 3, hair scraping - 1, water hardness - 2. Also considerable development work was accomplished on a rapid infrared method for the analysis of emulsion dips involving lindane, Delnav. Ciodrin, and toxaphene; analytical chemical and physical procedures for ortho-Phenylphenol disinfectants specifications; and other routine and development work involving a total of approximately 17,000 tests.

In addition to providing for rapid qualitative checking of unknown samples, and accelerating quantitative analysis work, equipment now available also provides for further study into the broad aspects of pesticide problems. During the same period the Division's Ectoparasite Laboratory at Beltsville received and identified 216 mite specimens; 2,592 lots of ticks; and 84 miscellaneous ectoparasite specimens.

Vatside Test for Toxaphene

Following field trials which showed that the vatside test, based on physical principles, was not effective as a useful tool in maintaining pesticide concentration, the ADE Chemical Reference Center endeavored to develop a vatside test based on chemical principles. Preliminary results look quite encouraging; however, additional field trials now underway will be required in order to evaluate the test. Work is also being done in regard to vatside tests applicable to other products.

FIELD EVALUATION OF ACARICIDES FOR SAFETY AND EFFECTIVENESS

During the year continued attention was given to pesticides used in treatment of animals for external parasites. Better vat and dipping management was stressed, more laboratory support was developed, and additional work was done in regard to chemicals which do not create tissue residue problems.

Vat Management in the Absence of a Vatside Test

Maintaining the required concentration of acaricides in the absence of a vat-side test requires careful technique and attention by the persons supervising the treatment of animals. Excessive concentration may poison or kill treated animals and may add tissue residue problems. Weak concentrations may not destroy all parasites and may permit the spread of disease. The practice of using weak concentrations may also result in more resistant parasite populations.

ADE Division Memorandum No. 505.12 dated June 3, 1963, furnishes detailed information pertaining to vat management.

Samples from field dipping vats supervised by regulatory personnel and those at public stockyards have shown considerable improvement. Random samples taken from auction market vats revealed that, in most cases, the baths were so weak as to be virtually ineffective for the purpose intended.

Additional Work Establishes Toxaphene Charging and Replenishment Ratios

A large number of samples taken from cattle or sheep dipping vats revealed considerable useful information. It was determined that good vat management procedures permit maintenance of the bath strength between 0.50 and 0.60 percent toxaphene. An initial charging ratio of 3 quarts of toxaphene to 100 gallons of water provides a bath strength of 0.56 percent of the chemical. Correct replenishment ratios are 4 quarts per 100 gallons for cattle and 5 quarts per 100 gallons for sheep. Details are given in ADE Division Memorandum 505.1, Supplement No. 1, dated April 30, 1964.

Studies with Spray-Dip Machines

The disproportionate carryout of chemical and water is expected to be different when using a spray-dip machine to treat cattle because of scabies rather than dipping them, particularly as there is much less drainback into the bath. Studies to more clearly quantitate the difference are being conducted in Nebraska and in Missouri.

Portable Sheep Dipping Vat Plans

Plans for a portable sheep dipping vat were completed. Many suggestions were received from field stations, agricultural engineers, and custom dippers for incorporation into the plans. From these plans a prototype portable dipping vat was constructed at Beltsville. The vat will be used to develop information in regard to disproportionate carryout, proper agitation, and other vat management problems. It will also be available when needed in nearby States. Completed plans will be duplicated for field distribution. Similar portable vats, which provide for better vat management and more efficient dipping, are being constructed in Kentucky, Nebraska, Missouri, and Wisconsin.

OTHER PARASITE INFESTATIONS REPORTED

Chorioptic Cattle Mange Reported in Many States

Chorioptic mites were found infesting cattle at the following livestock exhibitions: Louisiana State Fair, Shreveport, Louisiana; Knoxville, Tennessee, Fair; Mid-South Fair, Memphis, Tennessee; National Western Stock Show, Denver, Colorado; the International Livestock Exposition, Chicago, Illinois; Houston Fat Stock Show, Houston, Texas; Fort Worth Stock Show, Fort Worth, Texas.

The States involved and/or in which chorioptic mange was found on farms included Alabama, Arkansas, California, Idaho, Illinois, Iowa, Indiana, Kansas, Kentucky, Louisiana, Maine, Michigan, Mississippi, Missouri, New Hampshire, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Virginia, Washington, and Wisconsin.

Chorioptic Mange of Sheep, Goats or Horses

Chorioptic mites were collected from sheep in Texas and Virginia, and from goats in Missouri and Oregon, as well as from horses in Louisiana.

Sarcoptic Mites Collected From Several Species of Animals in Various States

Mites identified as Sarcoptic spp. were collected from cattle in Colorado, Iowa, Louisiana and Pennsylvania; from swine in Arizona, Colorado, Idaho, Maine, Michigan, Nebraska, Utah, Washington, and Wisconsin. Sarcoptic mites were also collected from a fisher, fox and porcupine in Maine.

Previous issues of the Animal Morbidity Report show reports of sarcoptic mites being collected from a capybara (South American pig-like rodent) and an ocelot. Swine are commonly affected with sarcoptic mange and the mites are collected from goats, cattle and horses from time to time.

Both Chorioptic and Sarcoptic Mites Found on a Sheep

Several chorioptic mites were identified and on one slide a single sarcoptic mite was found in scrapings obtained from a Virginia sheep. There have been rare instances in which sarcoptic mites were reported recovered from sheep in the United States. Records indicate that this disease is of fairly common occurrence in sheep in parts of Europe.

It could not be determined why or how the single sarcoptic mite was included in the scraping first submitted. There were no other species of livestock on or near the premises where the ram was located and, to the owner's knowledge, there had been no stray dogs or other animals in contact with the flock.

Several issues of the Animal Morbidity Report show findings of both chorioptic and sarcoptic mites affecting cattle in West Virginia and in a New York cattle herd chorioptic, sarcoptic and demodactic mites were demonstrated.

Psoroptic Mites in Goats' Ears

A number of infestations of Psoroptes caprae were found in the ears of goats in Texas. This mite has not spread to any other animal species.

Reports of Psorergates Bos and Psorergates Ovis

Psorergates bos mites (a new mite species) were recovered from three herds in New Mexico and one Texas herd. A previous collection had been made in January 1963 in a New Mexico herd.

Psorergates ovis mites have been collected from one sheep in New Mexico (1963), one in California (1961), and in Ohio (1952).

It should be stressed that regulatory officials in the States follow the policy of treating animals involved (using lime-sulphur, the recommended treatment) and tracing any movements of animals from the herds concerned.

Generally speaking, mites of the genus Psorergates have been collected from murid rodents, house mouse, vervet monkey, Cape porcupine, sheep and tropical bats. They apparently have a high degree of host specificity.

Nonparasitic Mites Found on Sheep

Nonparasitic mites are not infrequently found on sheep being inspected for scabies. These mites do not cause scabies but can easily be confused with those which cause the disease, particularly if it is suspected the flock may be infected.

In North Dakota two species of mites were collected from a flock, neither of which were psoroptic. The mites identified were Haemolaelaps casalis, a nonparasitic mite found throughout the world, commonly on rodents. Its presence on sheep is not unusual. The second species involved was identified as Hypopial nymphs. These mites also are extremely common and finding them on sheep is not unexpected.

A mite collected from a sheep in Wisconsin was identified as one of the numerous so-called grain mites, possibly of the genus Rhizoglyphus.

Since the Division's Ectoparasite Laboratory was established at Beltsville in 1961, numerous specimens other than scabies and mange mites have been submitted for identification from sheep and cattle suspected of being infected with scabies. These included a predaceous mite from a cow in Oregon, grain mites from a bull in Texas, specimens of grain mites from five different sheep flocks in Maryland, dry fruit mites and plant mites from sheep in Mississippi, grain mites from three sheep flocks, a free-living mite from one flock, and a soil mite from one flock in Virginia.

Regulatory personnel are to be complimented for their efforts in leaving no stones unturned in protection of the Scabies Free status gained. It is also well to remember that a further examination of the suspect flock may reveal that parasitic mites are also present.

Demodectic-like Mite Found on Cattle

The maceration technique, applied at the State-Federal Cooperative Laboratory in Colorado, revealed a mite resembling Demodex. At the Ectoparasite Laboratory, Beltsville, Maryland, the parasite was found to be of the family Eriophyidae. All the numerous species in this family are plant feeders. None are parasitic on animals. Although the mite does resemble Demodex somewhat, there is no close relationship between the two mites.

Sarcoptic Camel Mange Diagnosed at Several Zoos

A veterinary practitioner recovered sarcoptic mites from camels at a Tampa, Florida animal compound. The epidemiology of the outbreak disclosed that twenty camels had been imported from Australia in November 1963 through the Port of Los Angeles. While undergoing quarantine at Los Angeles, they had been sprayed on November 3 and 22 with a 0.22 percent solution of arsenious oxide and the eight shipped to Florida were sprayed at the Screwworm Inspection Line with Co-Ral. These treatments proved to be ineffective against the sarcoptic mites.

The remaining camels of the importation had been shipped to zoos at the following locations: Los Angeles and San Francisco, California; Portland, Oregon; Honolulu, Hawaii; El Paso, Texas, and to Mexico City, Mexico. Suspicious mange lesions were seen at all locations in the United States and two of the twenty imported camels had died at two of the zoos. Sarcoptic mites were also collected from the camels at two zoos in California and one in Oregon. Sprayings with 0.50 percent toxaphene eradicated the infestations. Several persons working with the diseased camels acquired temporary infestation.

Torsalo (Dermatobia Hominis), The Human Warble Fly Reported in the United States

In April 1964, Dermatobia hominis (Linne' Jr. 1781), the human warble fly, was reported for the first time in the United States. The second stage larval instar was found in the subcutis of a dog recently arrived in Wisconsin from Costa Rica. In May 1964, D. hominis larvae were found in the leg and at the base of the tail of a tapir that had arrived at the Lincoln Park Zoo, Oklahoma City, from South America three weeks previously. Reports indicate that this parasite is not uncommonly found infesting jaguars imported from tropical America.

Specimens from Rhinoceros Identified as Stomach Bot

The bot was collected from a white rhinoceros in an inland State zoo. It is not known to parasitize domestic animals. The host had been captured in Zululand, Republic of South Africa, in April 1963 and arrived in the United States in August 1963.

Mites of Macrocheles spp. Collected from Man

After inspecting sheep suspected of having psoroptic scabies, a veterinarian found that he had acquired a "mite passenger" on his person. The mite was forwarded to the ADE Ectoparasite Laboratory, and identified as being of Macrocheles spp. This is not known to be parasitic. The numerous species are associated with insects.

Notoedres spp.

Mites of Notoedres spp. were collected from a squirrel in Wisconsin and a mongoose in the Virgin Islands.

Mites of Bighorn Sheep

Mites identified as Psoroptes cervinus were collected from Bighorn sheep in Idaho.

Other Mites Collected

In Texas a free-living mite in the suborder, Trombidiformes was collected from a goat; a rabbit fur mite, Cheyletiella parasitivorax, was collected from a rabbit; and Haemolallaps glasgowi (common rodent mite) was collected from a groundhog in Arkansas. A Chelonethida (pseudoscorpion), a nonparasitic mite was also collected from the groundhog.

P S O R O P T I C C A T T L E S C A B I E S

PROGRAM ACTIVITIES FISCAL YEARS 1954 THROUGH 1964

| Fiscal Year | Number of Infected States | Number of Infected Counties | Number of Infected Herds | Total Inspections | Total Treatments | Infected Lots | Public Stockyards | |
|----------------|---------------------------------|-----------------------------------|--------------------------------|----------------------|---------------------|------------------|---------------------|-------------------|
| | | | | | | | Cattle Inspected | Cattle Treated |
| 1954 | 6 | 15 | 28 | 1,090,260 | 32,844 | 0 | 25,810,912 | 13,019 |
| 1955 | 6 | 19 | 30 | 1,146,174 | 396,268 | 2 | 25,845,757 | 12,389 |
| 1956 | 5 | 5 | 7 | 1,763,243 | 52,003 | 1 | 25,187,037 | 672 |
| 1957 | 5 | 12 | 25 | 2,089,912 | 184,236 | 3 | 25,994,640 | 2,287 |
| 1958 | 3 | 4 | 4 | 2,139,102 | 117,768 | 0 | 23,817,304 | 609 |
| 1959 | 6 | 21 | 27 | 5,862,011 | 268,364 | 9 | 21,977,606 | 21,456 |
| 1960 | 4 | 4 | 4 | 6,927,266 | 374,990 | 0 | 21,700,786 | 53,627 |
| 1961 | 5 | 8 | 10 | 7,660,685 | 234,293 | 3 | 21,334,686 | 46,005 |
| 1962 | 3 | 4 | 4 | 8,160,029 | 123,549 | 1 | 20,438,908 | 42,197 |
| 1963 | 0 | 0 | 0 | 13,464,758 | 129,882 | 0 | 20,168,561 | 69,772 |
| 1964 | 2 | 2 | 2 | 17,260,340 | 40,827 | 1 | 19,912,734 | 43,333 |

During fiscal year 1964 increased efforts were made to locate any additional evidence of the disease and nearly 4 million more cattle were inspected than the previous year.

OUTBREAKS REPORTED IN TWO STATES

On April 9, 1964, regulatory personnel collected psoroptic scabies mites from feeder cattle in a feedlot in Castro County, Texas. The outbreak had been first suspected as scabies by a local veterinary practitioner who reported the condition to regulatory authorities. Approximately 100 of the 2,500 cattle at the establishment were showing signs of the disease.

This outbreak represented the first finding of psoroptic cattle scabies in the United States in more than two years. The last previous outbreak had been found on March 13, 1962, involving a herd of 100 range cattle located on a ranch in Hansford and Ochiltree Counties, Texas.

The infected cattle were treated with toxaphene in accordance with recognized program procedures. Meticulous tracing of movements to the feedlot failed to reveal the source of the outbreak and no further evidence of scabies could be found in Texas.

An outbreak of psoroptic cattle scabies was found on April 17 by a stockyards veterinarian at the Greeley Stockyards, Greeley, Colorado. The owner had consigned two Shorthorn bulls from his herd in Douglas County, Colorado, to a registered sale at the stockyards on this date. The regulatory veterinarian noticed that one bull had what appeared to be chronic scabies lesions on the shoulders, tailhead, between the hind legs and on the front legs. He scraped these lesions but could not demonstrate live mites. The scrapings were sent to the State-Federal laboratory in Denver where the maceration-flotation procedure was employed. One mite was isolated by this method and mounted on a slide. This mite was identified as Psoroptes bovis by a parasitologist at Colorado State University and was later confirmed by the Beltsville ADE laboratory.

The herd involved is maintained at two separate locations in Douglas County. Cattle at both locations were considered infected since there had been intermingling. The owner assembled the herd as a hobby in 1958 and has maintained his operations on a "closed-herd" basis. It has been his practice to have the herd sprayed in a toxaphene preparation each spring and fall for lice control. Therefore, it appears possible that the infection has persisted "under control" for some time.

Systematic inspections of cattle were conducted in three Colorado counties and no further evidence of scabies could be found. State and Federal regulatory personnel inspected a total of 140,336 cattle in 262 herds in Colorado. The infected herd was spray-dipped twice in 0.5 percent toxaphene and all cattle considered exposed were spray-dipped once in the chemical.

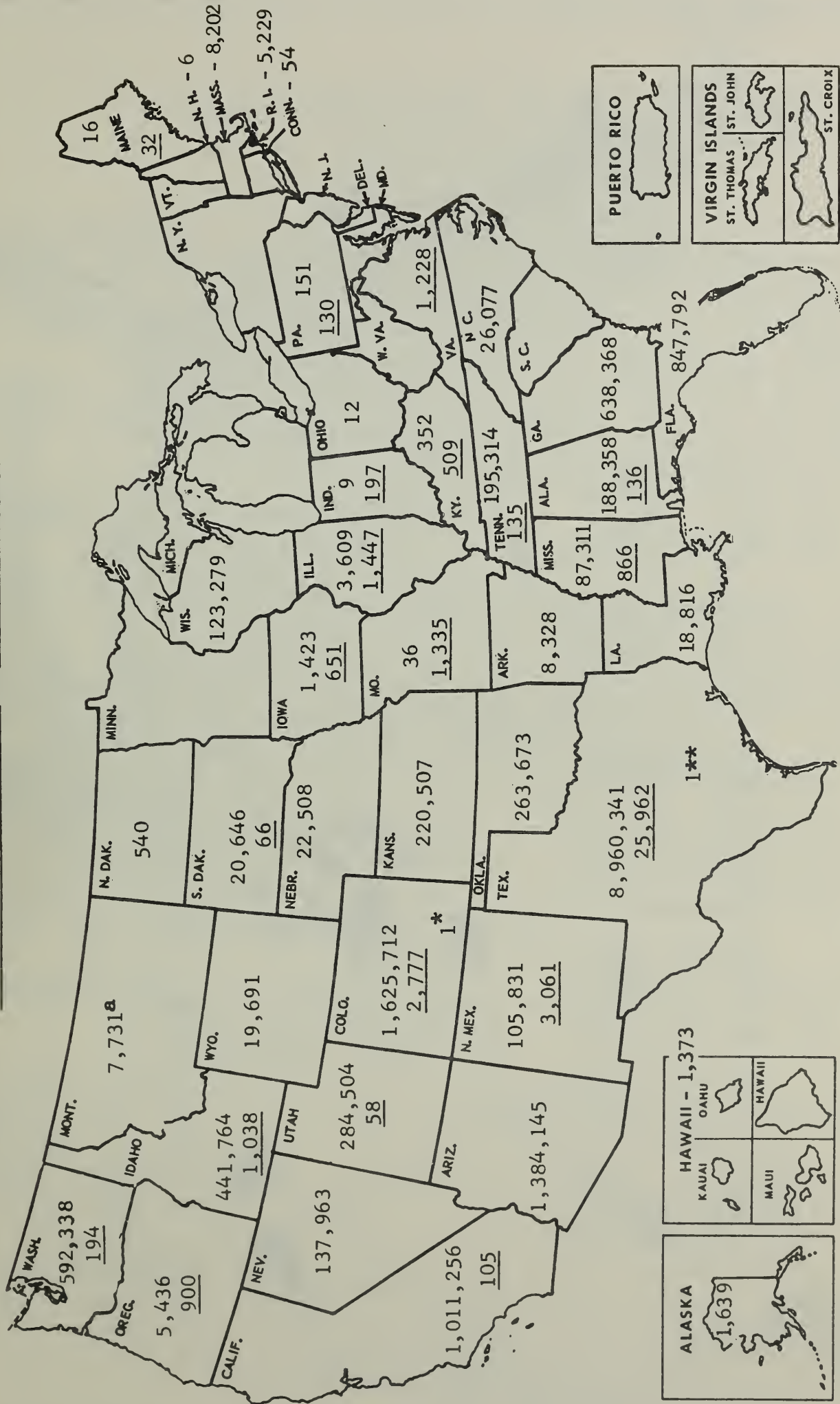
CATTLE SCABIES FOUND ON CATTLE PRIOR TO IMPORTATION

In December 1963 and February 1964, AIQ inspectors stationed at El Paso, Texas, collected psoroptic mites from cattle presented at Juarez, Mexico, for importation into the United States. The infected lots were rejected.

Psoroptic cattle scabies was found previously on May 7, 1962, and in November and March 1961, affecting Mexican cattle offered for entry at Juarez, Mexico. On April 20, 1961, Animal Inspection and Quarantine inspectors, inspecting Canadian cattle offered for inspection at the Ogdensburg, New York Port of Entry, found a lot to be infected with psoroptic mites.

PSOROPTIC CATTLE SCABIES

INSPECTIONS AND DIPPINGS - Fiscal Year 1964



KEY:

0 - Animals Inspected

0 - Animals Treated for Scabies

* - 1 herd, 57 cattle infected

** - 1 herd, 2600 cattle infected

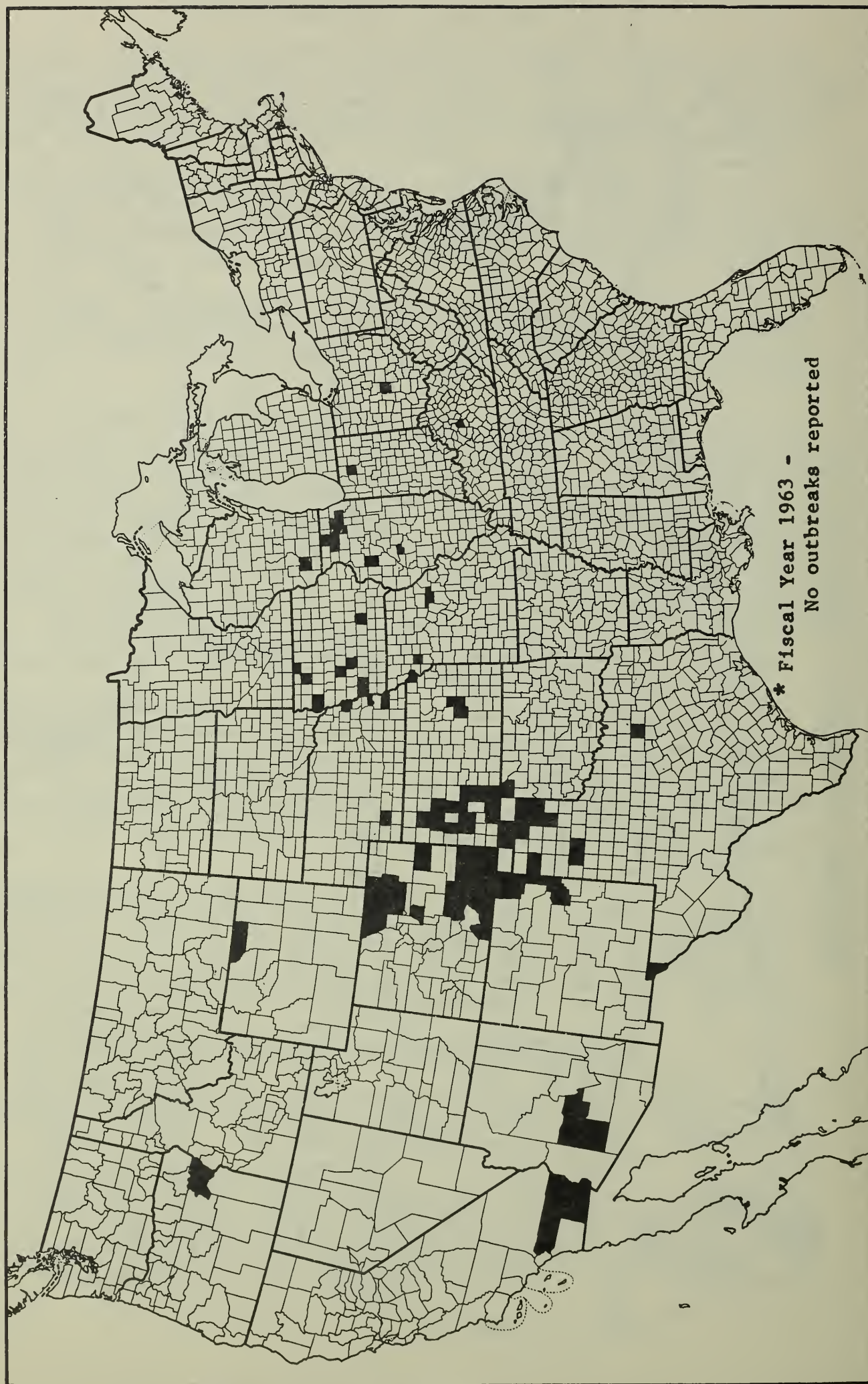
a - In addition, 725,067 cattle were inspected by Montana Deputy State Veterinarians at auction markets.

Total Inspections - 17,260,340

Total Treatments - 40,827

PSOROPTIC CATTLE SCABIES REPORTED

Fiscal Years 1954 to 1964 *



PSOROPTIC CATTLE SCABIES - FISCAL YEARS 1954 TO 1964

States and Counties Involved

Fiscal Year 1954

Arizona - Maricopa (8)
 California - Imperial (2), Riverside (1)
 Colorado - Baca (1), Bent (4), Crowley (1),
 Kit Carson (1), Otero (1),
 Prowers (3), Pueblo (2)
 Missouri - Audrain (1)
 Oklahoma - Harper (1)
 Texas - El Paso (1), Hartley (1)

Fiscal Year 1955

Colorado - Costilla (1), Crowley (9),
 Larimer (1), Otero (1),
 Prowers (3)
 Kansas - Doniphan (1), Finney (1), Ford
 (1), Hodgeman (1), Logan (1),
 Lane (1), Thomas (2)
 Kentucky - Franklin (1)
 Nebraska - Burt (1)
 Texas - Lipscomb (2), Swisher (2),
 Tarrant (2)

Fiscal Year 1956

Colorado - Crowley (3)
 Iowa - Mahaska (1)
 Kansas - Finney (1)
 New Mexico - Union (1)
 Texas - Roberts and Gray (1)

Fiscal Year 1957

Colorado - Bent (2), Crowley (11), Las
 Animas (3), Otero (1), Prowers
 (1), Pueblo (1)
 Illinois - Kane (1)
 Iowa - Guthrie (1)
 Kansas - Lyon (1)
 Missouri - Clinton (1)
 Ohio - Franklin (1)
 Wyoming - Sheridan (1)

Fiscal Year 1958

Colorado - Bent (1), Prowers (1)
 Iowa - Carroll (1)
 Kansas - Seward (1)

Fiscal Year 1959

Colorado - Otero (1)
 Illinois - DeKalb (2), DuPage (1),
 Knox (1), Ogle (1)
 Iowa - Clay (1), Emmett (1),
 Pottawattamie (2)
 Kansas - Chase (1), Clark (1), Ford
 (1), Gove (5), Kearney (1)
 Lane (1), Meade (1),
 Wichita (1)
 Nebraska - Dawson (1), Otoe (1),
 Sarpy (1)
 Texas - Hemphill (1), Ochiltree (1)

Fiscal Year 1960

Colorado - Weld (1)
 Indiana - Marshall (1)
 Iowa - Pottawattamie (1)
 Oregon - Baker (1)

Fiscal Year 1961

Colorado - Adams (1), Morgan (1),
 Weld (2)
 Illinois - Menard (1), Winnebago (1)
 Iowa - Plymouth (1)
 Oklahoma - Texas (2)
 Texas - Swisher (1)

Fiscal Year 1962

New Mexico - Quay (1)
 Texas - Hansford (1), Ochiltree (1)
 Wisconsin - Iowa (1)

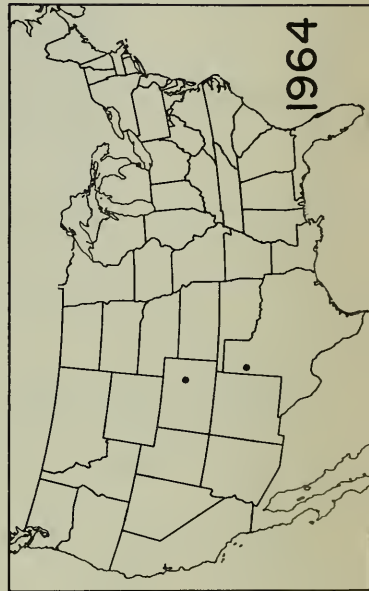
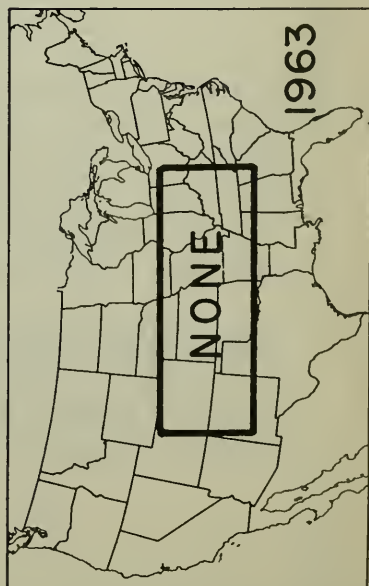
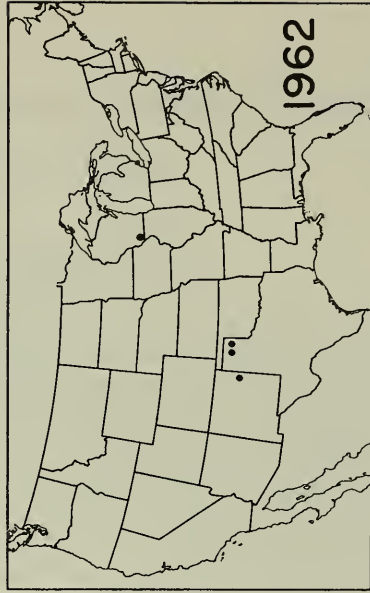
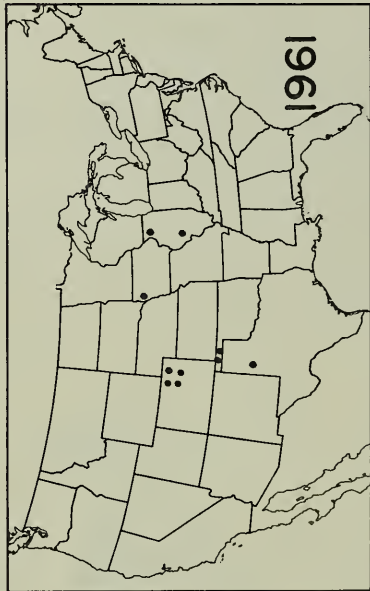
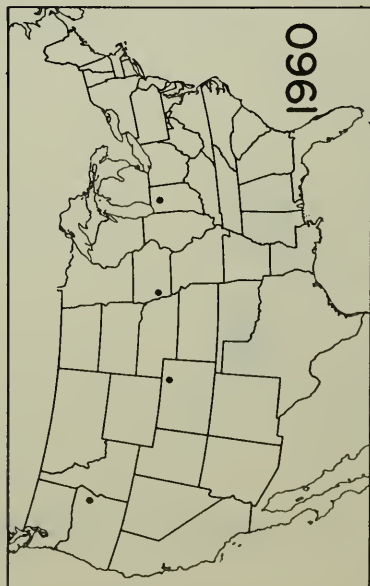
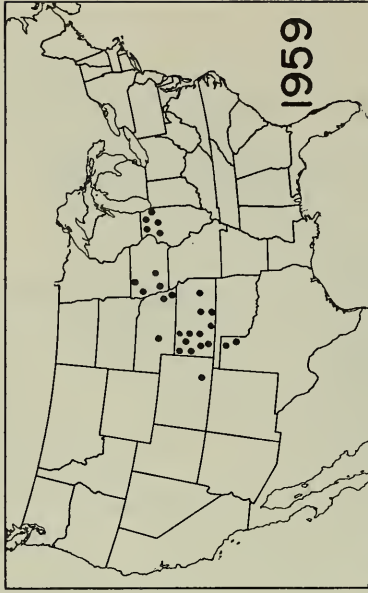
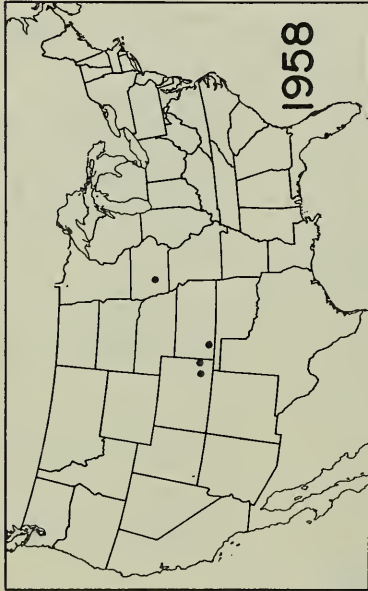
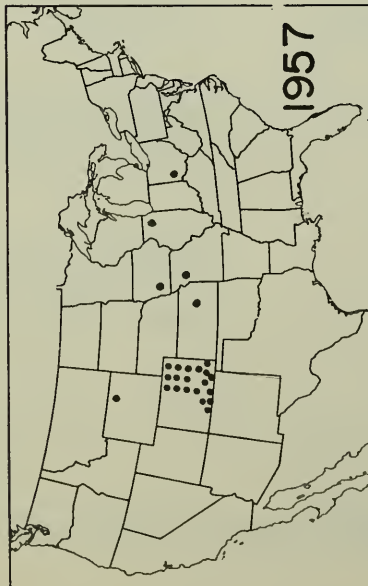
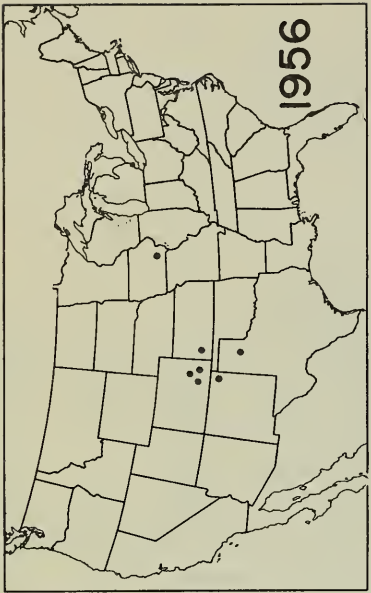
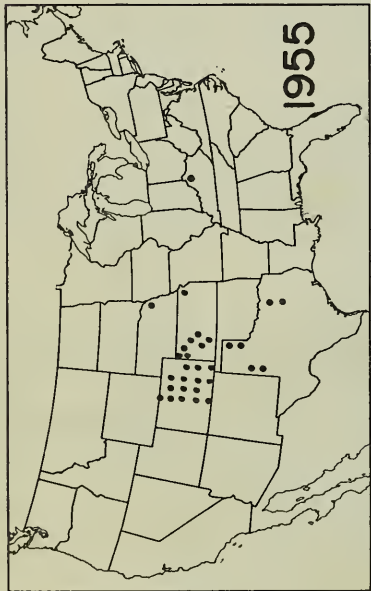
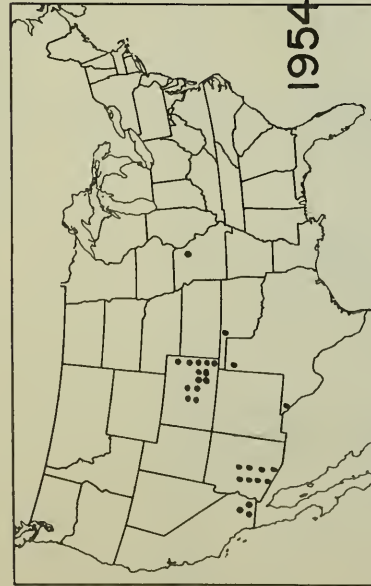
Fiscal Year 1963

No Outbreaks of Psoroptic Cattle
 Scabies Reported.

Fiscal Year 1964

Colorado - Douglas (1)
 Texas - Castro (1)

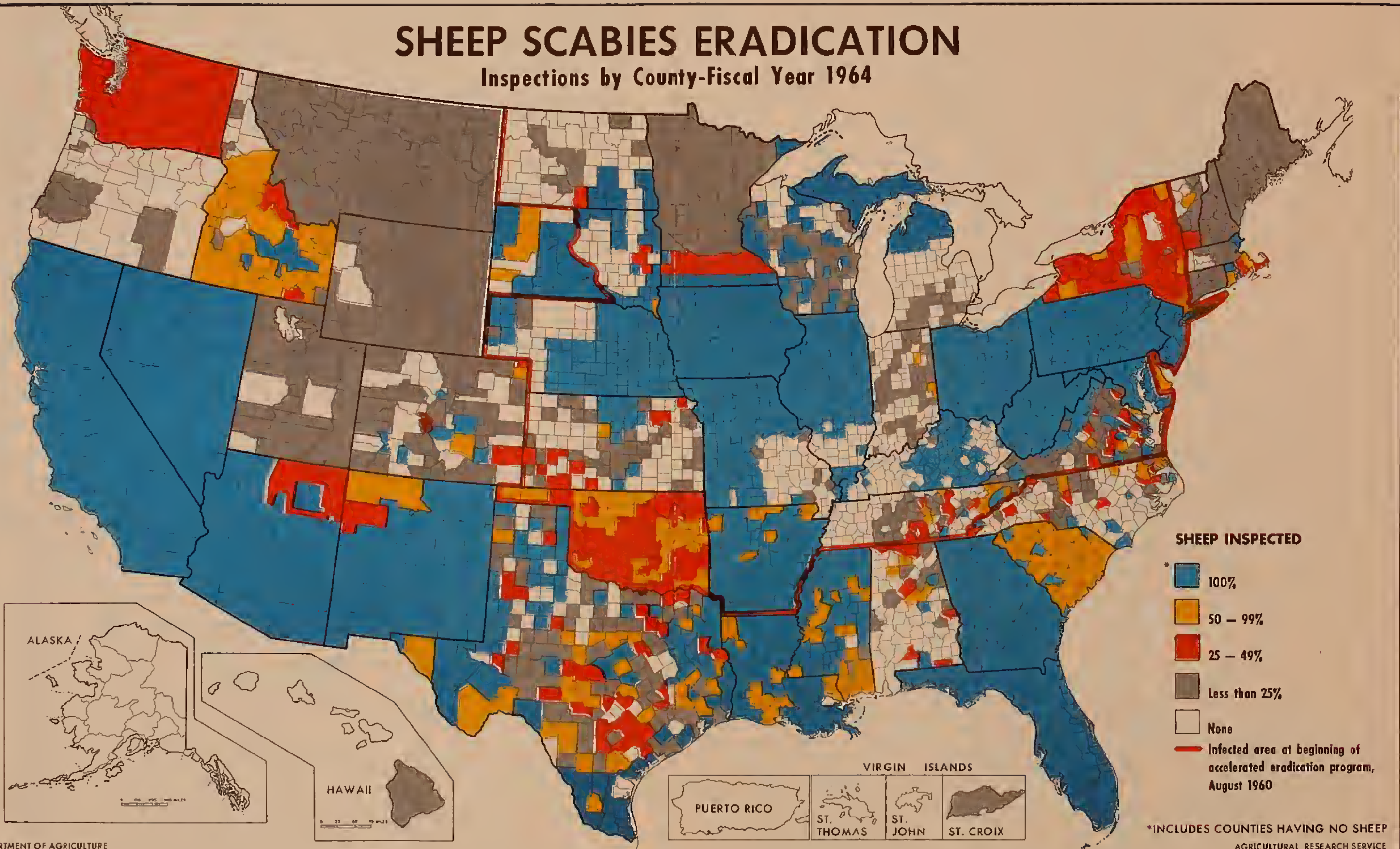
PSOROPTIC CATTLE SCABIES REPORTED



FISCAL YEARS
1954 TO 1964

SHEEP SCABIES ERADICATION

Inspections by County-Fiscal Year 1964



AMENDMENTS TO 9 CFR, PART 74 - SCABIES IN SHEEP

(Period - August 1, 1960, to July 1, 1964)

These regulations were amended effective August 1, 1960, designating all of 27 States and Territories and the District of Columbia and part of one State as Sheep Scabies Free Areas and the remaining States and Territories and part of one State as Infected Areas. The following areas were designated as Free Areas:

Alabama, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Louisiana, Maine, Massachusetts, Mississippi, Montana, Nevada, New Mexico, New Hampshire, North Carolina, Oregon, Puerto Rico, Rhode Island, South Carolina, Texas, Utah, Vermont, Washington, Wyoming, and that portion of South Dakota west of the Missouri River.

The amendment also provided for dipping of sheep moving interstate from Infected into Free and Eradication Areas and from one Eradication Area to another except those destined for immediate slaughter, and designated that portion of South Dakota east of the Missouri River as the first Sheep Scabies Eradication Area.

Since August 1960, considerable progress has been made in many States and the following areas were qualified under the provisions of ADE Division Memorandum No. 505.6 dated November 21, 1960, as Sheep Scabies Eradication Areas:

MONTH

STATES OR PARTS OF STATES ADDED TO SHEEP SCABIES INFECTED AND ERADICATION AREAS

February 1961 - State of New York.
 June 1961 - States of Arkansas, Nebraska, North Dakota, Tennessee.
 July 1961 - State of Illinois.
 September 1961 - 62 counties in western Kansas. This included Republic, Cloud, Ottawa, Saline, McPherson, Harvey, Sedgwick, Sumner and all counties in the State of Kansas lying west thereof.
 October 1961 - State of Hawaii, Wisconsin.
 December 1961 - State of New Jersey.
 January 1962 - 15 Upper Peninsula Counties in Michigan. These counties were Alger, Berens, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Leelanau, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft.
 March 1962 - State of Pennsylvania.
 July 1962 - State of Kentucky.
 - 19 counties in Michigan. These were Alcona, Alpena, Antrim, Benzie, Charlevoix, Cheboygan, Crawford, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Montmorency, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford.
 November 1962 - State of Minnesota.
 December 1962 - 43 counties in Kansas. These included Butler, Clay, Cowley, Dickinson, Marion, Washington, and all counties in the State of Kansas lying east thereof.
 January 1963 - State of Oklahoma.
 February 1963 - State of Maryland.
 - U. S. Virgin Islands.
 - 49 counties in Michigan. These included Clare, Cledwin, Lake, Mason, Ogemaw, Osceola, and all counties in the State of Michigan south thereof.
 - 70 counties in Missouri south of the Missouri River. These included Cole, Cooper, Franklin, Gasconade, Jackson, Lafayette, Moniteau, Osage, Saline, St. Louis and all counties in the State of Missouri lying south thereof.
 March 1963 - State of Virginia.
 - 20 counties in West Virginia. These were Berkeley, Fayette, Grant, Greenbrier, Hampshire, Hardy, Jefferson, Mercer, Mineral, Monroe, Morgan, Nicholas, Pendleton, Pocahontas, Raleigh, Randolph, Summers, Tucker, Upshur, and Webster Counties.
 June 1963 - 44 counties in Missouri north of the Missouri River.
 October 1963 - Box Butte, Dawes and Sioux Counties, Nebraska.
 January 1964 - Cumberland County, Pennsylvania; St. Croix County, Wisconsin; Jackson County, Minnesota; Cloud, Ellsworth, Harper, Jewell and Sedgwick Counties, Kansas.
 February 1964 - Lincoln County, Minnesota; and Augusta County, Virginia.
 March 1964 - State of Iowa and State of Ohio; Morrill County, Nebraska; and Highland County, Virginia.
 April 1964 - Rock County, Minnesota and West Virginia (remaining 35 counties).
 May 1964 - Chester County, Pennsylvania; and Republic County, Kansas.
 May 1964 - Banner County, Nebraska.

The effective State-Federal Cooperative Sheep Scabies Eradication Program to a number of areas resulted in eradication of the disease and the following areas achieved Sheep Scabies Free Status:

MONTH

STATES OR PARTS OF STATES ACHIEVING SHEEP SCABIES FREE STATUS

July 1961 - 11 counties in western Nebraska. These included Banner, Box Butte, Cheyenne, Dawes, Deuel, Garden, Kimball, Morrill, Sheridan, Sioux, and Scotts Bluff Counties. This was the first area designated as Infected in August 1960 to be considered free of the disease.
 December 1961 - 16 counties and parts of 2 counties in western North Dakota lying west of the Missouri River and State Highway No. 8.
 - 39 counties in western Kansas achieved Free Status. These included Phillips, Rooks, Ellis, Rush, Pawnee, Edwards, Kiowa, Comanche and all counties in the State of Kansas lying west thereof.
 January 1962 - Arkansas became the first entire State declared an official Sheep Scabies Infected Area in August 1960 to become Free.
 February 1962 - 16 counties east of the Missouri River in South Dakota were declared Scabies Free. These were McPherson, Edmunds, Faulk, Hand, Jerauld, Aurora, Douglas, and Charles Mix, and all counties in the State of South Dakota lying west thereof to the Missouri River.
 April 1962 - An additional 23 counties in western Kansas achieved Free Status making a total of 62 western Kansas counties Scabies Free. The Free Area in Kansas thus included Republic, Cloud, Ottawa, Saline, McPherson, Harvey, Sedgwick, and Sumner, and all counties in the State of Kansas lying west thereof.
 May 1962 - The remaining 35 counties and parts of 2 counties in North Dakota were declared Free making the entire State of North Dakota Scabies Free.
 - An additional 14 western Nebraska counties were added to the Free Area. Thus a total of 25 Nebraska counties were Scabies Free and includes the following: Arthur, Banner, Blaine, Box Butte, Brown, Chase, Cherry, Cheyenne, Dawes, Deuel, Dundy, Garden, Grant, Hooker, Keith, Keya Paha, Kimball, Loup, Morrill, Perkins, Rock, Sheridan, Sioux, Scotts Bluff, and Thomas.
 June 1962 - The 15 Upper Peninsula counties in Michigan were declared Free. These are Alger, Berens, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Leelanau, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft.
 July 1962 - 19 counties in Michigan. These were Alcona, Alpena, Antrim, Benzie, Charlevoix, Cheboygan, Crawford, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Montmorency, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford Counties.
 October 1962 - State of Wisconsin.
 - 2 counties in Hawaii. These were Honolulu and Kauai.
 - Remaining 28 counties in South Dakota were declared Free making the entire State of South Dakota Scabies Free.
 April 1963 - St. Thomas and St. John Islands in the U. S. Virgin Islands were declared Scabies Free.
 March 1963 - Maui County, Hawaii, declared Free making the entire State of Hawaii Scabies Free.
 - State of New York.
 May 1963 - States of Oklahoma and Maryland.
 - The remaining 43 counties in Kansas were declared Free, making the entire State of Kansas Scabies Free. The 43 counties included Butler, Clay, Dickinson, Marion, Washington, Cowley, and all counties in the State of Kansas lying east thereof.
 - 70 counties in Missouri. These included Cole, Cooper, Franklin, Gasconade, Jackson, Lafayette, Moniteau, Osage, Saline, St. Louis and all counties in the State of Missouri lying south thereof.
 June 1963 - States of Minnesota, Pennsylvania, and New Jersey.
 - The remaining 49 counties in Michigan were declared Free making the entire State Sheep Scabies Free. These 49 counties included Clare, Cledwin, Lake, Mason, Ogemaw, Osceola, and all counties in the State of Michigan south thereof.
 - 30 counties in Illinois. These were Bond, Clay, Clinton, Lawrence, Madison, Marion, Richland, and all counties in the State of Illinois south thereof.
 July 1963 - St. Croix, U. S. Virgin Islands, was declared Free, making the U. S. Virgin Islands all Scabies Free.
 August 1963 - State of Alaska and State of Virginia.
 December 1963 - Howell County, Hawaii.
 March 1964 - Cumberland County, Pennsylvania; St. Croix County, Wisconsin; and Jackson County, Minnesota.
 May 1964 - Augusta and Highland Counties, Virginia.
 June 1964 - Rock and Lincoln Counties, Minnesota.
 July 1964 - State of Kentucky.
 August 1964 - Chester County, Pennsylvania, was declared Free, making the entire State Free.
 - The entire State of Ohio; 72 northern counties in Illinois; and Cloud, Ellsworth, Harper, Jewell, Sedgwick and Republic Counties in Kansas were declared Free, making these 3 States entirely Free.

OUTBREAKS RESULTING IN AMENDMENTS TO FEDERAL REGULATIONS IN AREAS CONSIDERED SHEEP SCABIES FREE IN AUGUST 1960

SOUTH DAKOTA

In South Dakota, the appearance of sheep scabies resulted in a Federal quarantine being placed on Butte County in November 1960. It was removed the following month in December after the disease had been eradicated from the county. Fall River County, placed in the Infected and Eradication Areas in March 1961 because of scabies outbreaks, was returned to Scabies Free Status in August 1961.

NEW MEXICO

The State of New Mexico, considered Scabies Free in August 1960, was declared an Infected Area in September 1960 following scabies outbreaks. Counties were returned to the Scabies Free Area following inspection of all sheep in the county with no evidence of the disease. Thus the following changes in status occurred:

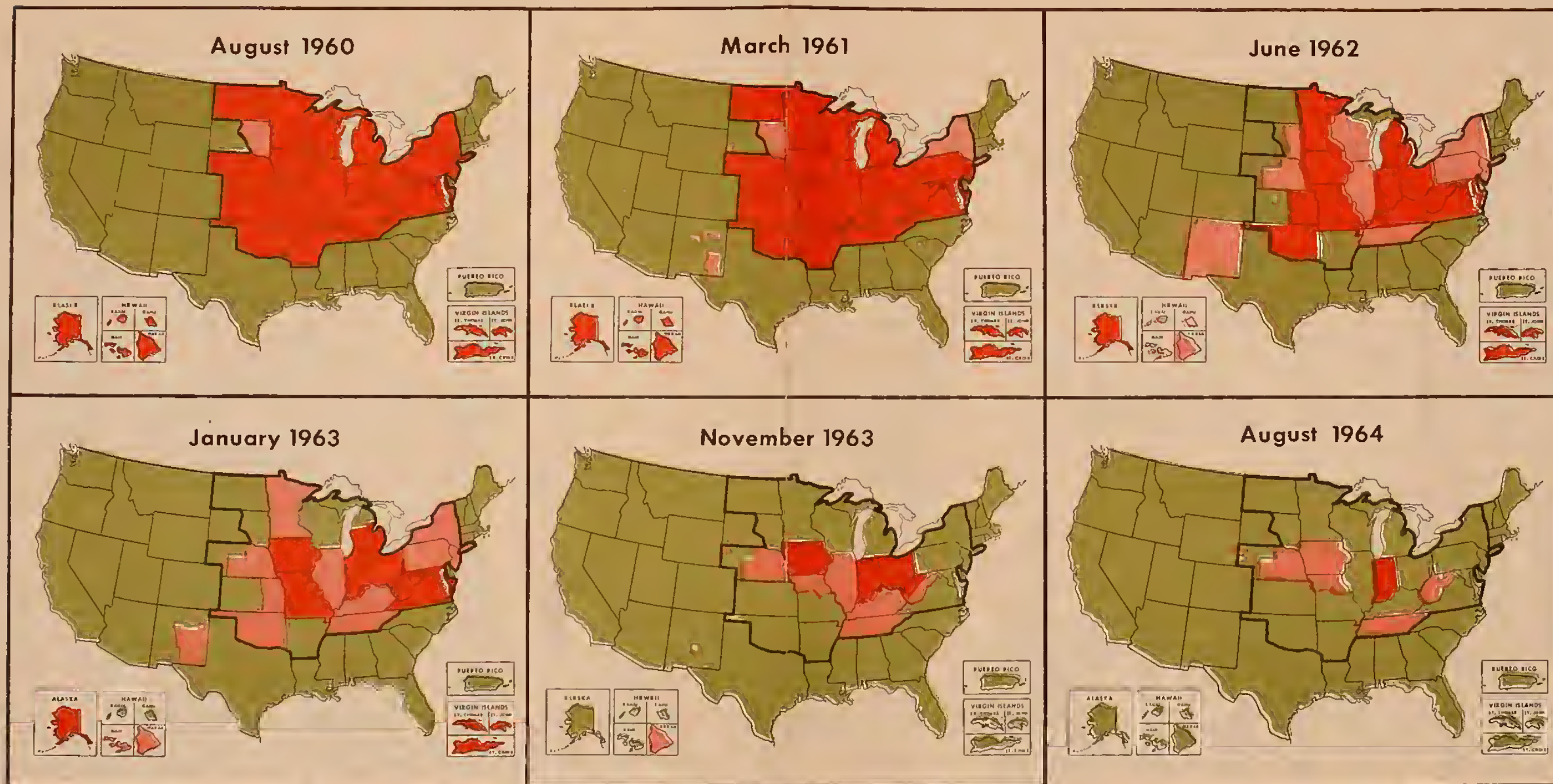
October 1960 - Catron, Colfax, De Baca, Guadalupe, Mora, Santa Fe, San Miguel, Torrance, Quay, Union, Harding, Rio Arriba, Sandoval, San Juan, Sierra, McKinley, Roosevelt, Socorro, Taos, and Valencia Counties were restored to the Free Area.
 November 1960 - Chavez, Curry, Dona Ana, Eddy, Grant, Lea, Hidalgo, Lincoln, Los Alamos, Luna, and Otero Counties were returned to the Free Area leaving only Bernalillo County in the Infected and Eradication Areas.
 December 1960 - San Miguel County was returned to the Infected and Eradication Areas as a result of a scabies outbreak.
 February 1961 - Chavez and Eddy Counties were similarly added to the Infected and Eradication Areas.
 April 1961 - Lea County was also returned to the Infected and Eradication Areas.
 August 1961 - Bernalillo, Chavez, Eddy, Lea, and San Miguel Counties were returned to the Free Areas and thus the entire State again achieved a Sheep Scabies Free Status.
 December 1961 - Scabies outbreaks resulted in the return of parts of Eddy and Chavez Counties to the Infected and Eradication Areas.
 January 1962 - Additional outbreaks caused the entire State with the exception of portions of McKinley and San Juan Counties (the Navajo Indian Reservation) to be again placed in the Infected and Eradication Areas.
 August 1962 - 18 counties were declared Free. These were Catron, Colfax, Dona Ana, Grant, Harding, Hidalgo, Los Alamos, Luna, McKinley, Mora, Rio Arriba, Sandoval, San Juan, San Miguel, Santa Fe, Sierra, Taos, and Union.
 March 1963 - 9 additional counties were added to the Free Area. These were Bernalillo, Curry, De Baca, Guadalupe, Quay, Roosevelt, Socorro, Torrance, and Valencia.
 April 1963 - The remaining 5 counties (Lea, Eddy, Chavez, Lincoln, and Otero) in New Mexico were declared Free giving the entire State a Sheep Scabies Free Status.
 November 1963 - Parts of Lincoln and Socorro Counties, New Mexico, were returned to the Infected and Eradication Areas as a result of outbreaks in October.
 July 1964 - Lincoln and Socorro Counties, New Mexico were declared Free, returning the entire State to the Sheep Scabies Free Area.

MISSISSIPPI

In March 1963, Bolivar and Washington Counties in Mississippi were placed in the Infected and Eradication Areas following discovery of sheep scabies outbreaks. These counties regained their Sheep Scabies Free Status on July 3, 1963, following the inspection of all sheep in five Mississippi counties with no further evidence of scabies being disclosed.

Prepared September 18, 1964

S H E E P S C A B I E S E R A D I C A T I O N



— Infected area at beginning of accelerated eradication program, 1960

| Date | Counties* | | | States* | | |
|-------------|-----------|-------------|----------|------------------|-------------|-----------|
| | Free | Eradication | Infected | Free | Eradication | Infected |
| August 1960 | 1,421 | 44 | 1,689 | 27 & P.R. | 1 | 23 & V.I. |
| August 1964 | 2,696 | 366 | 92 | 46 & P.R. & V.I. | 5 | 1 |

AREAS

Free

Eradication

Infected

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 28, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN WISCONSIN FY 1964

Infected Flock No. 1

On November 15, 1963, psoroptic scabies was diagnosed in St. Croix County, Wisconsin, in sheep comprising a combination breeding and feeding operation of 134 head. Suspected scabies was reported by the owner who had been apprised of the scabies problem at the time of a previous visit by an inspector in February 1962 during the State's successful all-out eradication program. Sheep on the premises at that time were negative for scabies.

Live Psoroptes ovis mites were collected by regulatory personnel. Identification was later confirmed at Beltsville. The flock was dipped under supervision in toxaphene on November 21 and again on December 3, 1963. Two Wisconsin flocks had received sheep from the infected flock and were dipped as exposed in November and December in toxaphene. One of these flocks had received sheep in July 1963 and was located in St. Croix County; the other flock was in Columbia County and had received sheep in August 1963. Signs of scabies could not be detected in either flock. Other sales from the infected flock had been consigned to slaughter.

A thorough epidemiological study of the outbreak was made. The involved sheep operation was founded from two Wisconsin sources in 1960 and 1961 and, as mentioned above, the infected flock was negative when all sheep in Wisconsin were inspected in February 1962. In October 1962, thirty-five ewes were purchased at the South St. Paul Stockyards in Minnesota. Additional purchases of 12 ewes, 2 rams, and 98 feeder lambs were made in June and July 1963 through a commission company at the South St. Paul Stockyards. Consignments that were shipped prior to the declaration of Minnesota as a Sheep Scabies Free Area were dipped at the stockyards before leaving Minnesota. These included the 35 ewes in October 1962 and 32 of 98 lambs delivered June 20, 1963.

Sources of the June and July 1963 consignments from South St. Paul included flocks in Wisconsin and Minnesota. A list of five sources was developed in Wisconsin. Four of these were flocks owned by individuals. Three of these were found negative on inspection, while the other one had been dispersed. The fifth source was a Wisconsin trader whose consignment to the South St. Paul commission company in July 1963 included sheep from five additional Wisconsin sources. Inspections of these flocks revealed no further evidence of scabies. In Minnesota, it was determined that 22 flocks were possible sources of sheep that ended up in the infected Wisconsin flock. Twenty of these sources comprising 710 sheep in 15 counties were inspected with no signs of scabies being disclosed. The other two possible source flocks had been dispersed. However, inspection records showed that they had been negative on inspection during Minnesota's eradication program conducted the previous winter.

The St. Croix County outbreak resulted in an amendment to Part 74, 9 CFR, effective January 8, 1964, redesignating the County as an Infected-Eradication Area. Following the thorough epidemiological investigation outlined above and the inspection of 674 flocks comprising 26,547 sheep in four Wisconsin counties, St. Croix County was returned to the list of Sheep Scabies Free Areas on March 20, 1964.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 28, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN PENNSYLVANIA FY 1964

On November 7, 1963, a livestock inspector making routine area sheep inspections noticed signs suggestive of scabies in a farm flock comprising 61 sheep in Cumberland County, Pennsylvania. A regulatory veterinarian was called in and isolated mites which he identified as Psoroptes ovis on November 12, 1963. His identification was confirmed at the Pennsylvania Department of Agriculture laboratory at Summerdale and also at the ADE Ectoparasite Laboratory, Beltsville, Maryland.

The flock involved had been previously considered suspicious for scabies during Pennsylvania's eradication program. In February 1962, during routine inspection, the flock was classed as suspicious. However, the quarantine was released the following month because mites could not be found and clinical signs of scabies had disappeared. Several months later, in December 1962, the above experience was repeated. During the third round of inspections of Pennsylvania sheep during the eradication program, the flock again showed no signs of scabies. The owner reportedly treated the sheep with a commercial preparation which undoubtedly masked the true signs of scabies, thereby complicating the diagnosis. The maceration technique for demonstrating scabies mites was not employed.

An epidemiological investigation of the outbreak revealed that in August 1962 the owner purchased fifteen ewes (the entire flock) from an individual at Shippensburg, Pennsylvania. This was considerably later than the February 1962 date when the flock was first considered suspicious and, therefore, probably did not constitute an introduction of infected sheep.

During the period April through August 1963, fifty-five lambs were sold at various times to a licensed butcher at Etters, Pennsylvania. Evidence is strong, therefore, that scabies could have existed in the flock for many months prior to the ultimate diagnosis on November 12, 1963. The flock was dipped twice in toxaphene in accordance with uniform eradication program procedures, and the disease was eradicated.

The epidemiological study of this outbreak was considered inconclusive because many of the owner's purchases were made through dealers whose records pertaining to farms of origin were incomplete. Of 31 flocks considered to have possibly contributed sheep into the infected flock, it was found that 12 no longer existed. All sheep in the remaining 19 flocks were inspected and no evidence of scabies could be found. All sales from the infected flock were for slaughter only.

The finding of this outbreak resulted in Cumberland County being redesignated as an Infected and Eradication Area in 9 CFR, Part 74, on January 8, 1964. Following extensive sheep inspections in the area with no further evidence of the disease being disclosed, the County was returned to the list of Free Areas effective March 9, 1964.

On March 9, 1964, during routine county-wide sheep inspections, scabies was diagnosed in a farm flock comprising approximately 650 sheep in Chester County. A livestock inspector had suspected scabies and asked a regulatory veterinarian stationed at a nearby public stockyards to accompany him on an inspection of the flock. Together, they isolated live psoroptic scabies mites. The identification was later confirmed at Summerdale and Beltsville.

The infected flock was the last one in the County to be inspected during the reinspection drive and scabies had not been detected in any of the other flocks. However, an adjacent flock was considered suspicious, but extensive efforts failed to reveal the presence of scabies mites.

A history of the infected flock indicated that it had been infected previously in May 1960, prior to Pennsylvania's eradication program. Records indicated that the flock was dipped only once at that time.

The infected flock was dipped under supervision in toxaphene on March 17 and again on April 2, 1964. No evidence of scabies could be seen in the flock during a meticulous inspection on June 2. Mites could not be found in skin scrapings carefully examined grossly and through use of the maceration-flotation technique at Summerdale and Beltsville. The adjacent flock that had been considered exposed was also dipped on the same dates as a precaution.

The Chester County outbreak resulted in an amendment to 9 CFR, Part 74, effective April 9, 1964, redesignating the County as an Infected-Eradication Area. Chester County was returned to the list of Free Areas on August 5, 1964, following a complete reinspection of sheep in the area.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 27, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN KANSAS FY 1964

The twelve outbreaks of psoroptic sheep scabies reported in Kansas during fiscal year 1964 are traceable directly or indirectly to a sheep dealer located in Adams County, Nebraska.

The first evidence of the outbreak was seen on November 4, 1963, when the disease was diagnosed in infected flock No. 1 on a premises in Cloud County. On November 6, psoroptic scabies mites were demonstrated in infected flocks No. 2 and No. 3 in the County. Considerable movement between the two latter flocks had occurred. Inspections in the area turned up still another infected flock (No. 4) in Cloud County on November 12. During the earlier stages of the epidemiological study of these outbreaks, it was suspected that a sheep-shearing crew might have brought scabies mites onto the infected premises from an adjacent State.

However, the epidemiological picture became clearer as more information became available and it became apparent that movements of sheep through a livestock auction market located at Beloit in Mitchell County, Kansas, in April and October 1963 provided the key to unravel the route through which the disease was disseminated. Outbreaks in Ellsworth County (No. 5) on November 18, Harper County (No. 6) on November 20, Sedgwick County (No. 7) on November 26, and in Jewell County (No. 8) November 27 provided still further evidence of a relationship between the infected sheep and sales through the Beloit auction market. However, the picture remained somewhat cloudy regarding the origin of these outbreaks until further information became available in connection with outbreaks on February 4, 1964 (No. 8), in Cloud County; February 19 (No. 10) in Jewell County; March 11 (No. 11) in Sedgwick County; and March 31 (No. 12) in Republic County.

In the epidemiological study, program officials in Kansas determined that the sale of thirteen rams consigned by the Adams County, Nebraska, dealer on April 6, 1963, to the Beloit auction market figured prominently in the spread of scabies. Three of these rams were purchased by the individual owning the infected flock No. 8 in Jewell County. Five rams were purchased by the owner of the infected flock No. 5 in Ellsworth County and the remaining five were sold to an intermediate flock in Cloud County. It is apparent that this flock served to further disseminate scabies although the flock itself could not be classed as infected.

On May 7, 1963, a sheep dealer in Sedgwick County purchased five rams (believed to be from the above-mentioned thirteen rams in the Adams County, Nebraska, consignment) consigned by the Ellsworth County infected flock No. 5 to a public stockyards at Wichita. Two of these rams were resold directly into the infected flock No. 11 in Sedgwick County. The other three rams were retained by the dealer in a lot of sheep assembled from numerous sources. On August 20, 1963, this dealer sold sixty ewes into flock No. 6 in Harper County; and, on October 19, 1963, he sold 59 sheep directly into the Sedgwick County flock No. 7. Also on October 19, 1963, he consigned the remainder of his sheep to the Beloit auction market mentioned above.

Sheep from this consignment found their way into five other infected flocks: Fifty-nine head went into the infected flocks No. 2 and No. 3 in Cloud County; 104 sheep went into the Cloud County infected flock No. 4; two sheep went into the Cloud County flock No. 9; and one ram returned to the Ellsworth County infected flock No. 5 that had earlier received five rams on April 6, 1963, from the Beloit auction market.

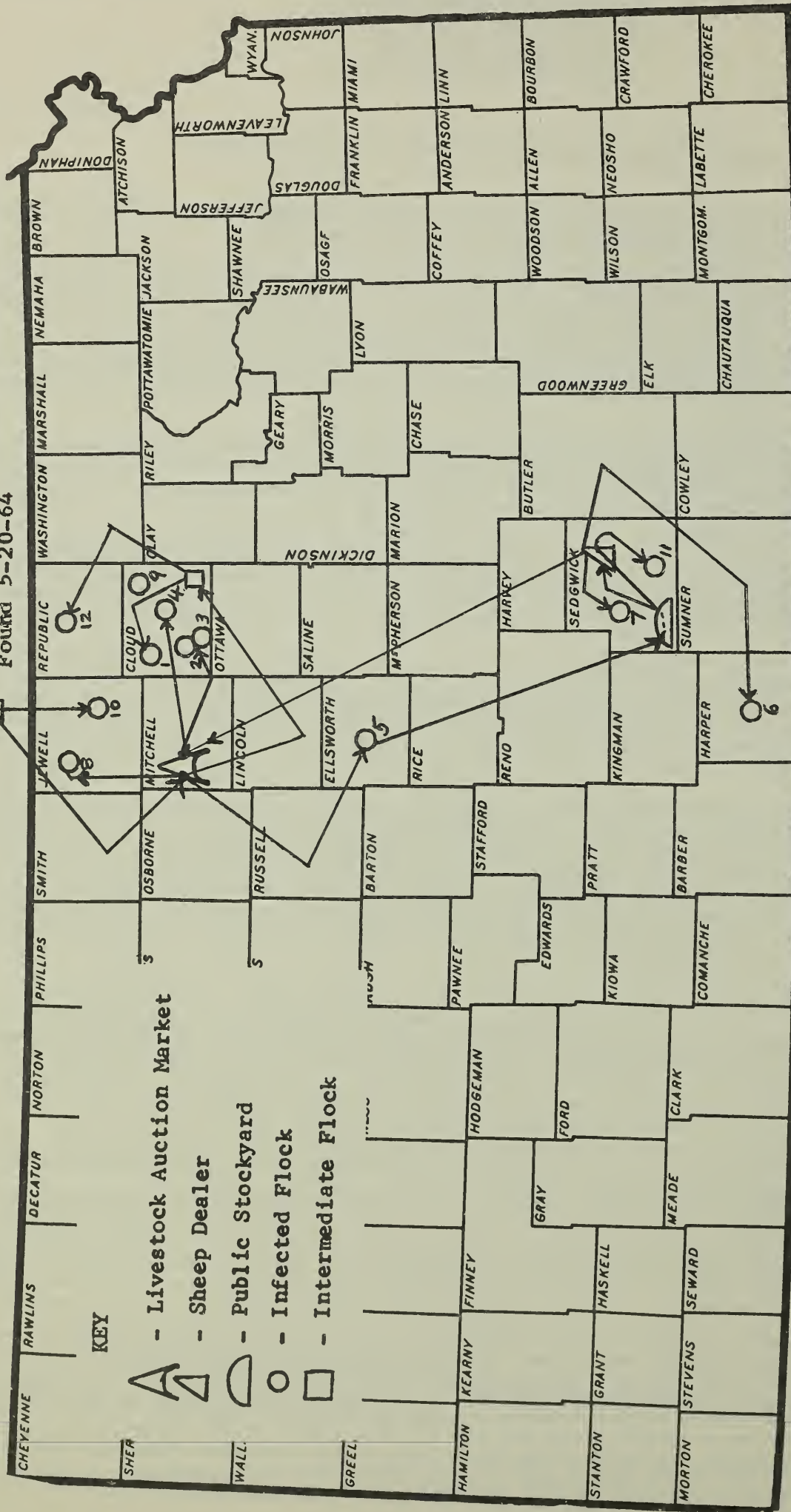
Going back to the records of the Cloud County intermediate flock owner who had acquired five of the thirteen rams on April 6, 1963, additional bits of the epidemiological puzzle fell into place. It was learned that he had reconsigned one of these animals on May 2, 1963, to the owner of flock No. 1 in Cloud County. It was also learned that he had sold sheep into the Republic County infected flock No. 12.

Thus, eleven of the twelve fiscal year 1964 outbreaks in Kansas were traceable to the thirteen rams sold at Beloit by the Adams County, Nebraska, dealer on April 9, 1963. Further investigation revealed that the owner of the Jewell County infected flock No. 10 had acquired three rams in a direct purchase from the Adams County, Nebraska, dealer in October 1963. Therefore, all twelve outbreaks relate to movements of sheep from the Nebraska dealer. It is of interest to note that psoroptic sheep scabies was found on sheep consigned by this dealer to an auction market in Buffalo County, Nebraska, on April 20, 1964.

As a result of the outbreaks discussed above, amendments to Part 74, 9 CFR, redesignated Cloud, Ellsworth, Harper, Jewell, and Sedgwick Counties on December 11, 1963, and Republic County on April 18, 1964, as Infected-Eradication Areas. All infected and exposed flocks were dipped under supervision and all sheep flocks in the affected counties were inspected, as well as all flocks in Smith, Osborne, Mitchell, Lincoln, Ottawa, and Clay Counties, with no further evidence of sheep scabies being disclosed. More than half of the flocks were inspected in Russell County and more than one-fourth of all flocks in ten additional Kansas counties were inspected. Following these inspections, Kansas officials recommended that the six affected counties be returned to the list of Scabies Free Areas. This was accomplished on August 20, 1964, the effective date of an amendment to Part 74, 9 CFR, to provide such recognition.

SHEEP SCABIES OUTBREAKS FY 1964

Sheep Dealer - Adams County, Nebraska
Found 5-20-64



Dates Infected Flocks Found

| | | | | | |
|---|----------|---|----------|----|---------|
| 1 | 11-4-63 | 5 | 11-18-63 | 9 | 2-4-64 |
| 2 | 11-6-63 | 6 | 11-20-63 | 10 | 2-19-64 |
| 3 | 11-6-63 | 7 | 11-26-63 | 11 | 3-11-64 |
| 4 | 11-12-63 | 8 | 11-27-63 | 12 | 3-31-64 |

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 28, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN MINNESOTA FY 1964

Infected Flock No. 1

On November 21, 1963, during routine inspections, psoroptic scabies was diagnosed in sheep located in a combination breeding-feeding operation in Jackson County, Minnesota. The entire operation comprising 322 sheep was quarantined and all sheep dipped under supervision in toxaphene on November 25 and December 5.

The involved flock had previously been dipped in toxaphene on March 25 and April 5, 1963, following the disclosure of scabies on January 7, 1963, during Minnesota's all-out eradication program. The flock had been inspected at intervals of 30 and 90 days following the second dipping and had been found clinically negative for scabies.

Introductions into the flock since the previous infection included feeder lambs from Wyoming (lesions were not found on these lambs and sheep on originating premises were healthy) and six ewes and a ram purchased from Minnesota sources. Sheep remaining on the latter premises were negative for evidence of scabies. The only sheep sold from this flock had been consigned to slaughter.

Minnesota officials concluded that the reappearance of scabies in this flock probably represented a continuation of the earlier infection rather than a newly introduced one and, consequently, represented a shortcoming in the dipping procedures. Failure to hand treat thickly encrusted chronic lesions and failure to hold the sheep in the vat for a full minute were singled out by program officials in Minnesota as possible causes of the continuing infection.

Part 74, Title 9 CFR, was amended effective January 8, 1963, to redesignate Jackson County an Infected-Eradication Area. Following the inspection of all sheep in the County with no further evidence of scabies being disclosed, it was returned to the list of Free Areas on March 20, 1964.

Infected Flock No. 2

On December 17, 1963, psoroptic sheep scabies was diagnosed at a public stockyards in Sioux Falls, South Dakota, in a consignment of 34 lambs from Lincoln County, Minnesota.

An investigation was immediately launched in Minnesota where it was determined that the flock had been missed when Minnesota's State wide all-out inspection program was conducted in December 1962 and January 1963. The flock had been purchased just prior to the start of the program and was not included in the list of flock owners prepared by the County extension agent. Inspectors routinely inquired at each premises visited whether there were any other flocks in the vicinity, and the owner's neighbors apparently were not aware that he had established a flock. It was determined that the flock was established through purchase of sheep from a dealer who in turn had purchased the sheep from three sales barns in the area. Epidemiological investigations revealed that one of the contributing flocks had a history of having had a condition resembling scabies early in 1962. During Minnesota's inspection program, this contributing flock had been diagnosed as clinically infected with scabies although no mites could be demonstrated even after use of the maceration technique. The flock had been dipped twice in toxaphene because of the clinical evidence of scabies.

Psoroptic scabies mites were demonstrated in the 91 sheep remaining on the Lincoln County premises and the flock was dipped twice in toxaphene--once in December 1963 and again 2 weeks later in January 1964. The above-mentioned sale of 34 lambs at Sioux Falls and the sale of one ram into a second Lincoln County flock constituted the only movements of sheep from the infected flock since it had been established.

Infected Flock No. 3

The flock into which the ram had been sold was classed as infected on January 6, 1964, when mites were demonstrated at the University of Minnesota in skin scrapings taken from the ram. This second flock of 39 sheep was also dipped in toxaphene on the same dates the source flock (infected flock 2) was dipped. Reinspections of infected flocks Nos. 2 and 3 were made at intervals of 30 and 90 days and all signs of scabies had disappeared.

An amendment to Part 74, 9 CFR, redesignated Lincoln County as an Infected-Eradication Area effective January 22, 1964. Following county-wide sheep inspections disclosing no further evidence of scabies, Lincoln County was returned to the list of Free Areas effective June 18, 1964.

Infected Flock No. 4

On January 20, 1964, on routine area inspection, psoroptic sheep scabies was diagnosed clinically in a flock of 145 sheep in Rock County, Minnesota. Psoroptic mites could not be isolated in the field. However, mites were isolated through use of the maceration-flotation technique in skin scrapings submitted to the Veterinary Diagnostic Laboratory at the University of Minnesota.

The infected flock was dipped under supervision in toxaphene on January 24 and February 4, 1964. Inspections at 30 and 60-day intervals following the second dipping showed that the disease had been eradicated. A second flock in Rock County had received a ram from the infected flock in January 1964 and Minnesota officials decided to handle this flock as though it were infected. The flock was dipped twice in toxaphene although mites could not be demonstrated in any of the sheep in numerous attempts to find them, including several maceration-flotation tests.

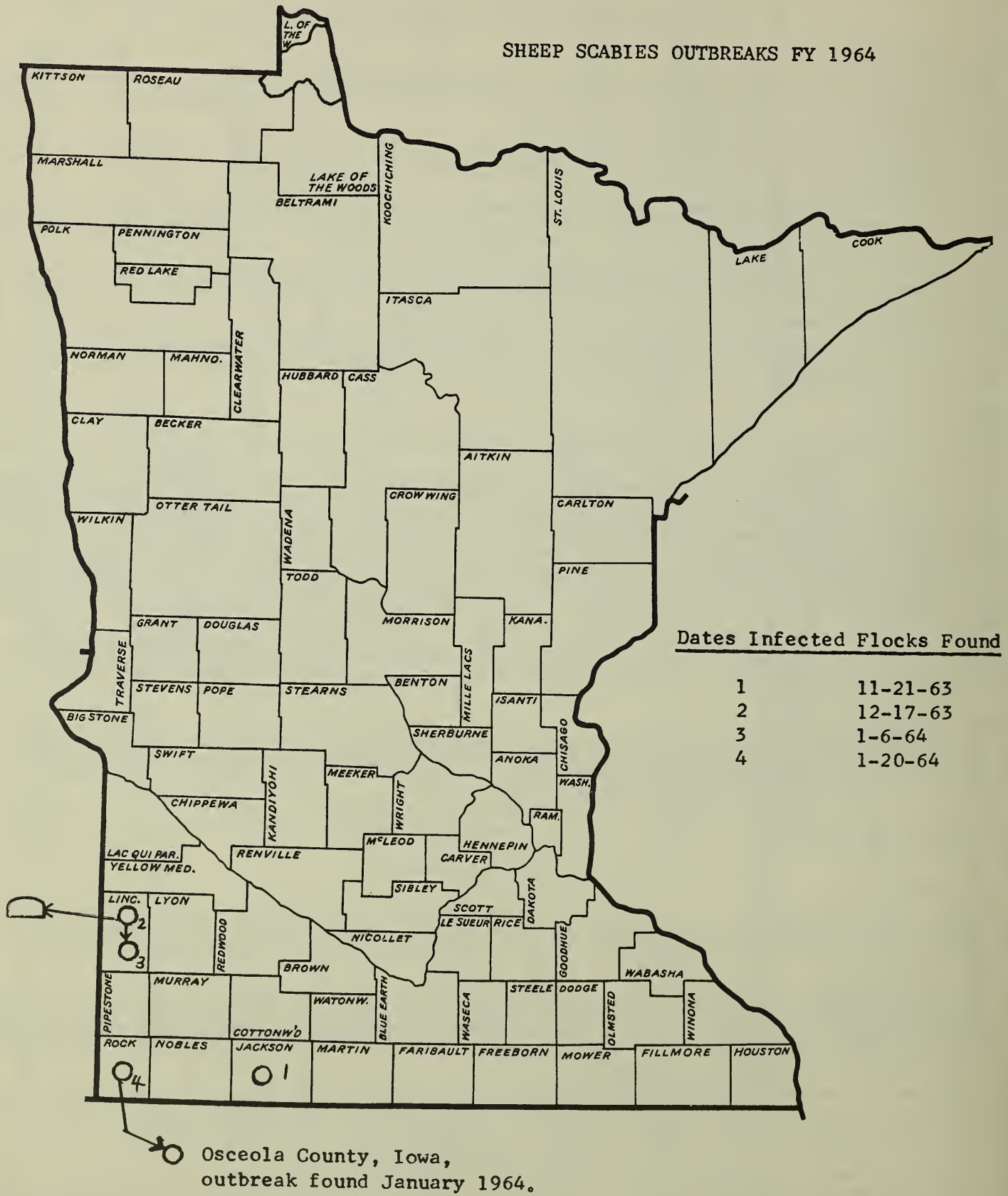
Since April 1963, when the infected flock was known to be free of scabies, sheep had been acquired from five Minnesota sources. Three of these flocks were negative for signs of scabies when inspected and the other two sources no longer existed. One of these had sold out to the infected flock; the other flock had been dispersed with part of the flock being consigned to slaughter and the remainder sold to an individual in Rock County. The latter flock was also negative.

Sales from the flock were made through local auction markets on three dates in January 1964. The ram that went into the second Rock County flock mentioned above as having been dipped twice as a precautionary measure was the only animal consigned to a sale on January 4, 1964. Other sales dates were January 10 and 17, 1964. On January 10 a consignment of ten lambs was purchased by a packer-buyer and went to immediate slaughter. On January 17, a consignment of 49 lambs was purchased by an individual in Osceola County, Iowa. This flock had been found infected by Iowa, probably as a result of the introduction of these lambs. All sheep moving through the involved auction markets on the above dates were considered exposed. Those flocks that could be located were quarantined for further observation even though no signs of scabies could be seen. Many of the exposed sheep went directly to slaughter.

As a result of the outbreak, Rock County was returned to the Infected-Eradication Areas when Part 74, 9 CFR, was amended March 3, 1964. All sheep in Rock County were inspected following the outbreak and an amendment effective June 18, 1964, restored the County to the list of Free Areas.

MINNESOTA

SHEEP SCABIES OUTBREAKS FY 1964



UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 28, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN NEBRASKA FY 1964

For purposes of clarity, the reader should refer to the diagram of movements concerned with Nebraska outbreaks included with this summary. The numbers on the diagram represent a chronological listing of fiscal year 1964 outbreaks in the order of their occurrence. Because of the complex relationship of movements between various outbreaks discussed below, the number assigned to each outbreak on the diagram will be used as a reference point in the discussion that follows.

Infected Flock No. 1

The first outbreak of psoroptic sheep scabies reported in Nebraska in fiscal year 1964 was found July 19, 1963. A county extension agent suspected that scabies existed in his flock of approximately 300 sheep and reported it to the State veterinarian. It was not possible to determine the source of this outbreak. It is believed that the owner acquired exposure through the purchase of sheep exposed to scabies at a livestock auction market in Buffalo County, Nebraska. The infected flock was dipped under supervision on August 24 and September 5, 1963. The only sale from this flock was to a second Nuckolls County flock in May 1963. This flock was handled by Nebraska officials as infected although mites could not be demonstrated and the flock was dipped on August 27 and September 9, 1963.

Infected Flock No. 2

The second outbreak reported involved a Sioux County flock being held under quarantine for dipping as an exposed flock. Exposure occurred when the flock received sheep of questionable status in 1963 from a Hall County, Nebraska, dealer whose sheep sales during the same period were believed involved in other Nebraska outbreaks.

Infected Flocks Nos. 3, 7, 9, 15, 16, and 20

Sheep movements from flock No. 2 through a Crawford, Nebraska, auction market are believed responsible for infection found in flocks Nos. 3, 15, and 20 in Box Butte County and directly to flock No. 7 in Sioux County. Infected flock 9 received sheep from this same market at a time when the animals could have been in contact with infected sheep at the auction market. Infected flock 16 in Banner County is also believed to have been exposed through the purchase of sheep through the Crawford market from an intermediate flock in Sioux County. This intermediate flock was in contact with infected flock No. 7 in Sioux County at a time when scabies was known to exist in that flock. Infected flock 7 is also responsible for the spread of scabies to a Rock Island County, Illinois, outbreak found on January 6, 1964.

Infected Flock No. 4

Infected flock No. 4 in Nuckolls County contained only sheep that had been acquired from a Beloit, Kansas, auction market on various dates in 1963 through September. Outbreaks in Kansas during fiscal year 1964 were related to sales through this same auction market at about the same period of time. Infected flock No. 5 in Webster County received its exposure through direct pasture contact with infected flock No. 4.

Infected Flocks Nos. 6, 12, 14, 17, 18, and 19

The owner of infected flock No. 2 consigned sheep to a commission company at the Omaha stockyards in September 1963. It is believed that sheep in this consignment were responsible for scabies in infected flock No. 6 in Otoe County, infected flock No. 12 in Jefferson County, infected flock No. 14 in Richardson County, and infected flock No. 17 in Dodge County. Epidemiology of infected flock No. 17 revealed that sheep had also been acquired in July and August 1963 at the Omaha stockyards, some of which sheep had originated from a dealer at Wichita, Kansas. It is now known that the Kansas dealer is the probable source of several outbreaks in Kansas. Sales from this Kansas dealer after October 1963 were considered suspicious. However, it remains remotely possible that infected sheep could have been on his premises during July and August 1963 when sheep were sold into infected flock No. 17 via Omaha. Infected flocks Nos. 18 and 19 received their exposure through the purchase of sheep from infected flock No. 17.

Infected Flock No. 8

Infected flock No. 8 in Custer County was diagnosed on December 24, 1963. It was not possible to determine the source of this outbreak. The only purchase made by the owner was in January 1963 when he bought all of the sheep owned by an individual in Red Willow County, Nebraska. The Red Willow County flock did not show evidence of scabies during area inspections just prior to its purchase and removal to the Custer County premises.

Infected Flock No. 13

Infected flock 13 in Merrick County is believed to have been exposed through the purchase of sheep from the same Hall County dealer mentioned above as having sold suspicious sheep into infected flock 2.

Infected Flock No. 21

Infected flock 21 in Adams County was diagnosed on May 20, 1963, when the owner, a sheep dealer, consigned 88 sheep (his entire flock with the exception of one lamb) to a Buffalo County auction market. When diagnosis of scabies was made at the auction market, regulatory personnel visited the Adams County dealer's premises and learned that the remaining lamb had died and was not available for examination. The dealer stated that he had acquired the sheep sold at the auction market from an individual in Adams County. The latter individual was contacted and stated that he had in turn acquired all of his sheep from the dealer at an earlier date. It is interesting to note that all twelve of the Kansas outbreaks reported in fiscal year 1964 are traceable to this same dealer in Adams County.

Infected flocks 2, 3, 7, 9, 15, 16, and 20 occurred in Nebraska counties that were Sheep Scabies Free at the beginning of the fiscal year. These outbreaks resulted in the redesignation of Box Butte, Dawes, Morrill, and Sioux Counties as Infected-Eradication Areas in Part 74, 9 CFR, effective October 25, 1963. Banner County was redesignated an Infected-Eradication Area effective May 9, 1964. The remainder of the 21 outbreaks in Nebraska occurred in that part of the State already designated as an Infected-Eradication Area at the beginning of fiscal year 1964. Since the epidemiology involves movements between both areas and spread to other States, it is impossible to separate outbreaks as they relate to the Free and Eradication Areas.

All infected flocks in Nebraska found during fiscal year 1964 were dipped twice under supervision. Extensive inspections were conducted to detect further dissemination of the disease. Final plans are underway to conduct two complete rounds of inspection in Nebraska during the winter of 1964-65. Program officials plan to conduct these inspections beginning on the western side of the State where scabies is less likely to still be present and work eastward until all flocks in the States have been inspected.

SHEEP SCABIES OUTBREAKS IN NEBRASKA FY 1964






| County | Infected Flock No. | How Discovered | Date Diagnosed | Treatment | Possible or Probable Source of Outbreak | Movements of Exposed Sheep and Possible Spread | Remarks |
|-----------|--------------------|---|----------------|---|---|---|--|
| Nuckolls | 1 | Reported by County Extension agent, the owner. | 7-19-63 | Flock of 300 sheep dipped 8-24-63 and 9-5-63. | Possibly through purchase of exposed sheep at a Buffalo Co. livestock auction market. | Sales into only one Nuckolls Co. flock which was dipped twice. Mites were not demonstrated. | |
| | 4 | Owner took a lamb to Beloit, Kansas, auction market where diagnosis was made. | 11-13-63 | Dipped 800 on 11-21-63 and 12-4-63. | Purchases in Sept. 1963 and previous dates from a Beloit, Kans. auction market. | All sales directly to slaughter. | Purchases at Kansas market were at time infected sheep were believed handled at the market. |
| | 2 | Being held for dipping as an exposed flock. | 9-19-63 | Dipped 1,322 head on 9-17 and 9-28-63. | Received possibly exposed sheep in 1963 from a Hall Co. dealer. | Probably spread directly or indirectly to Flocks Nos. 3, 6, 7, 9, 12, 14, 15, 16, 17, 18, 19, and 20. | Live mites found on one ewe in this flock on 3-5-64. Officials convinced the animal was a stray at time of Sept. dippings and later returned to flock. |
| | 7 | Area inspections following outbreak No. 2. | 12-17-63 | Dipped 109 head on 1-7-64 and 1-17-64. | Direct purchase of sheep from Flock No. 2. Also received sheep from Hall Co. dealer through Crawford market. This dealer furnished sheep to Inf. Flock 2. | Sales caused outbreak in a Rock Island Co., Ill., flock found 1-6-64. | |
| Box Butte | 3 | Found by veterinary practitioner at Crawford auction market. | 10-11-63 | Consignment of 189 head to auction market constituted entire flock except for two lambs which had strayed before they could be dipped. | From Flock No. 2 via a Crawford auction market. Also sheep were received in Oct. 1963 through this market originating in a Wyoming flock found infected in Aug. 1964. | No sales other than the slaughter consignment on 10-11-63. The two lambs probably strayed into flock No. 20. | Consignment was not dipped, was slaughtered within State. |
| | 15 | Area inspections following Outbreak No. 3. | 3-25-64 | 335 sheep dipped 4-14 & 16 and 4-24 & 27, 1964. | From Flock No. 2 via a Crawford auction market. Also sheep were rec'd in Oct. 1963 through this market originating in Wyoming flock found infected in Aug. 1964. | Sheep from this flock were sold through the Crawford market in March & Aug. 1963. Also slaughter sheep sold on various dates. | |
| | 20 | Tracing movements from Flock No. 2 & surveillance. | 5-18-64 | Dipped 412 head on 6-16 and 6-25-64. | From Flock No. 2 via a Crawford auction market or strays from No. 3 | 5 ewes sold through Crawford auction to dealer involved in other outbreaks. Other sales went directly to sltr. | |
| Banner | 16 | Reported by owner | 4-9-64 | 380 sheep dipped 6-29-64 and 7-8-64. | Purchase of sheep at a Crawford auction market from an intermediate flock exposed to flock No. 7. | No sales. | |
| Morrill | 9 | Veterinary practitioner | 12-31-63 | Flock contained 412 sheep when quarantined 12-31-64. 212 feeder lambs dipped 1-22 and 2-1-64, not under supervision. These were slaughtered at Scotts Bluff Nebr., in Mar. 1964. Remaining 200 dipped under supervision 4-9 & 19, 1964. | Received sheep from a Crawford auction market at time they could have been exposed by infected sheep in the market. | Sale to slaughter only. | |

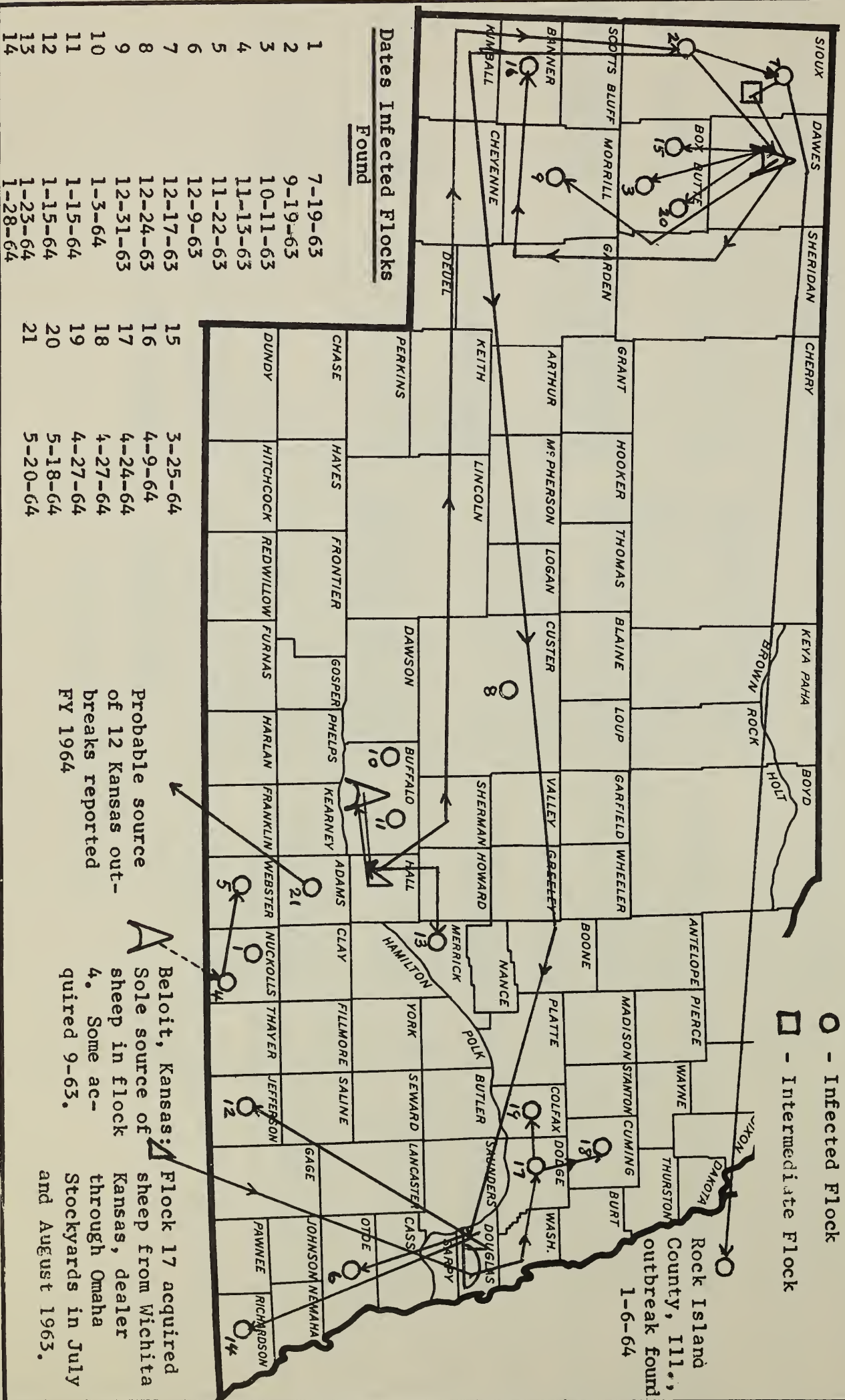
| Custer | 8 | Veterinary practitioner | 12-24-63 | 157 head dipped 1-20 and 1-31-64. | Unknown | All Sales to slaughter |
|------------|----|---|----------|---|--|--|
| Buffalo | 10 | Veterinary practitioner at a Kearney auction market. | 1-3-64 | 26 head dipped 3-26 and 4-6-64. | All sales and purchases were thru a Buffalo Co. auction market. All records were burned in a fire at market. | No sales except to slaughter. |
| | 11 | Area inspections | 1-15-64 | 64 head dipped Feb. 7 & 19, 1964. | All sales and purchases were thru a Buffalo Co. auction market. All records were burned in a fire at market. No further info. available. No purchases within previous 2 yrs. | Approx. 15 lambs sold to slaughter at Omaha, June 1963. |
| Webster | 5 | Area inspections | 11-22-63 | 45 head dipped 11-21-63, 12-4-63 | Direct pasture contact with flock No. 4. | Purchased sheep from Beloit, Kansas, auction market on various dates in 1963. |
| Utco | 6 | Area inspections | 12-9-63 | 74 head dipped 12-14 & 27-63 | Purchased sheep from Flock No. 2 consigned in Sept. 1963 to Omaha Stockyards. | No sales. |
| Jefferson | 12 | Veterinary practitioner | 1-15-64 | 163 sheep dipped 1-23 and 2-5-64 | Purchased sheep from Flock No. 2 consigned in Sept. 1963 to Omaha Stockyards. | No sales. |
| Richardson | 14 | Area inspections | 1-28-64 | 46 head dipped 3-30 and 4-9-64 | Purchased sheep from Flock No. 2 consigned in Sept. 1963 to Omaha Stockyards. | Sold 8 sheep Nov. 1963 to another Richardson County flock dipped as infected in March 1964. with lime-sulphur dip. |
| Merrick | 13 | Area inspections | 1-23-64 | 23 head dipped 2-7 and 2-20-64. | Purchased sheep from same Hall County dealer mentioned in Flocks Nos. 2 and 7. | All sales to slaughter. |
| Adams | 21 | Veterinary practitioner at a Buffalo Co. auction market. | 5-20-64 | There were no sheep left on dealer's premises. | Unknown | Probably responsible for all 12 Kansas outbreaks found in FY 1964. |
| Dodge | 17 | Neighbor who knew about program called a State inspector. | 4-24-64 | 40 head dipped 5-5-64 (38) 5-18-64 (2 died) | Purchased sheep from Flock No. 2 consigned in Sept. 1963 to Omaha Stockyards or those from a Wichita, Kans., dealer consigned to Omaha Stockyards. | Flocks Nos. 18 and 19. |
| Cuming | 18 | Tracing from outbreak 17. | 4-27-64 | 33 head dipped 5-5-64 5-18-64 (63) included 30 new lambs. | Purchased sheep from Flock No. 17. | No sales |
| Golfax | 19 | Tracing from outbreak 17. | 4-27-64 | 38 head dipped 5-5-64 and 5-18-64. | Purchased sheep from Flock No. 17. | No sales. |

NEBRASKA

SHEEP SCABIES OUTBREAKS FY 1964

KEY

-  - Livestock Auction Market
-  - Sheep Dealer
-  - Public Stockyard
-  - Infected Flock
-  - Intermediate Flock



UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 30, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN NEW MEXICO FY 1964

Infected Flock No. 1

On October 23, 1963, a State scabies inspector diagnosed psoroptic scabies in a consignment of 57 lambs in stock pens at Corona, Lincoln County, New Mexico. There were also 600 feeder lambs and 295 slaughter lambs in these pens when the diagnosis was made.

The slaughter lambs were not considered to be exposed and were allowed to proceed directly to slaughter at Forth Worth, Texas. The 600 feeder lambs were dipped in toxaphene as exposed on October 24, 1963, and moved to Kansas for feeding purposes. The 57 infected lambs were returned to the originating premises in Lincoln County where they rejoined 65 ewes and a ram. The ram, the 57 lambs, and 62 of the ewes were then removed to a USDA research laboratory at Albuquerque for experimental studies. Of the three remaining ewes on the premises, one was found dead, one was shot and buried, and the third was slaughtered for meat.

Infected Flock No. 2

In the comprehensive epidemiological study that was immediately undertaken, it was learned that the owner had sold two rams in April 1962 to a Lincoln County ram flock. This flock (No. 2) was found infected when psoroptic mites were isolated by regulatory personnel on October 30, 1963. The flock was dipped under supervision in toxaphene on October 31 and November 14, 1963.

Infected Flock No. 3

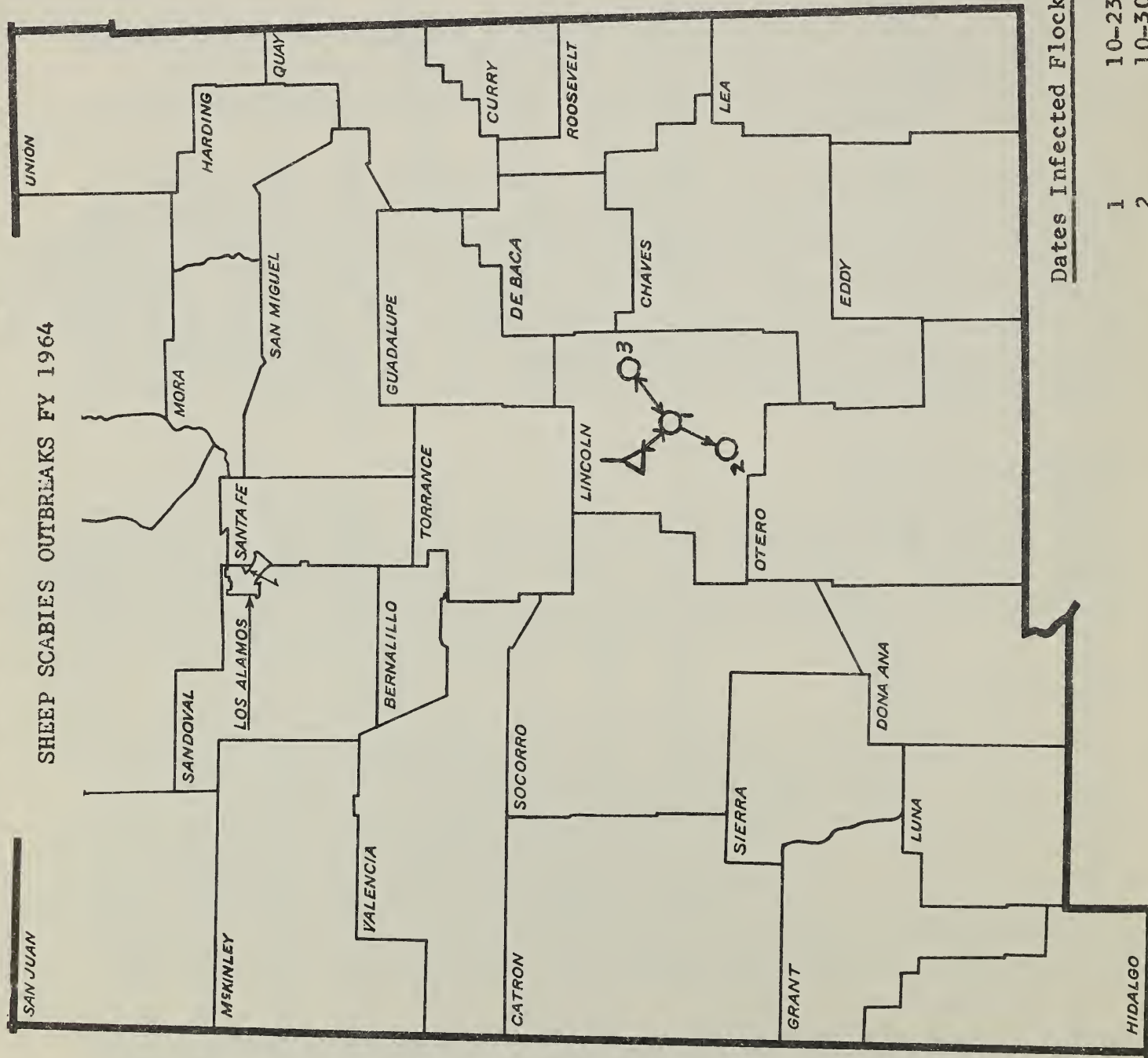
It was also learned that exposure of a large flock (infected flock No. 3) in Lincoln County had occurred when several sheep strayed from the flock during July or August 1963 and mingled with the infected flock a few days before being returned to their own premises. This exposed flock was quarantined. However, it was decided that dipping should be postponed until after lambing; therefore, the quarantine remained in effect throughout the winter. Five months later, on April 2, 1964, regulatory personnel isolated psoroptic mites from sheep in the flock. Thus, the status of the flock was changed from exposed to infected and dipping under supervision in toxaphene took place on April 9 and 19, 1964.

The only other sale from the infected flock had involved 55 old ewes sold in January or February 1963 through an intermediate flock to a shopping center near Gallup, New Mexico, where they were slaughtered. Inspections resulting from possible exposure were negative for further evidence of scabies.

These outbreaks resulted in an amendment to Part 74, 9 CFR, effective November 18, 1963, adding parts of Lincoln and Socorro Counties to the Infected-Eradication Areas. Infected flocks were dipped twice under State-Federal supervision, and seven flocks considered exposed were dipped once in toxaphene under supervision. Two or more inspections were made on approximately 60 flocks of sheep located in the Eradication Area before New Mexico officials recommended that the area be returned to a Free status. An amendment effective July 1, 1964, restored the entire State of New Mexico to the list of Scabies Free Areas.

NEW MEXICO

SHEEP SCABIES OUTBREAKS FY 1964



KEY

○ - Outbreaks

△ - Stock Pens

Dates Infected Flocks Found

| | |
|---|----------|
| 1 | 10-23-63 |
| 2 | 10-30-63 |
| 3 | 4-2-64 |

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Disease Eradication Division
Federal Center Building
Hyattsville, Maryland 20781

October 29, 1964

PSOROPTIC SHEEP SCABIES OUTBREAKS IN VIRGINIA FY 1964

Infected Flock No. 1

On December 18, 1963, during routine area reinspections, regulatory personnel isolated psoroptic scabies mites in a flock of 66 sheep in Augusta County, Virginia. The infected flock was dipped under supervision in toxaphene on January 10 and 22, 1964.

The owner of the infected flock had purchased twelve ewes from a sheep trader at a local livestock auction market on August 14, 1962. The sheep were not dipped at the market. The owner reportedly had dipped his flock in November 1962 after they developed signs suggestive of scabies. The signs subsided and the flock was considered negative on preliminary inspection in February 1963 during Virginia's all-out eradication drive. It is probable that a few mites lived through the unsupervised treatment and that a mild scabies infection actually existed at the time of the February 1963 inspection. Other sheep included with the consignment of the above-mentioned ewes on August 14, 1962, which were delivered to another Augusta County, Virginia, flock, had been infected on April 3, 1963.

Sales were made from infected flock No. 1 in May, June, July, August, and November 1963 and involved only sheep consigned directly to slaughter.

Infected Flock No. 2

On the date of the second dipping of flock No. 1, inspectors isolated psoroptic mites in a neighbor's flock of 41 sheep in an adjoining pasture separated by a wire fence. This second infected flock was also dipped in toxaphene on January 23 and February 4, 1964. There had been no sales made from flock No. 2. However, the owner had loaned a ram into a neighboring flock. The latter flock was dipped as a precautionary measure on February 4 and 17, 1964.

Infected Flock No. 3

On February 18, 1964, regulatory personnel making routine inspections diagnosed psoroptic scabies in a third flock in Augusta County. No relationship could be established between this flock and the two outbreaks previously found. All sales from the flock had been to slaughter. The flock comprising 27 feeder lambs was dipped in toxaphene on February 26 and March 10, 1964. The owner had purchased the sheep on nine different dates in September, October, November, and December from four livestock auction markets in Virginia. A total of 63 Virginia consignors were considered as possible sources of the infection. All flocks still in existence were located and proved to be negative for signs of scabies. A total of 53 consignors from West Virginia were also considered as possible sources. West Virginia officials could not find any relationship between the consignors and scabies outbreaks in their State. All inspections of West Virginia flocks involved were negative.

Infected Flock No. 4

Psoroptic scabies was disclosed in a fourth Augusta County flock, comprising thirteen sheep, March 23, 1964. The flock was considered vaguely suspicious on area inspection in February 1963 but had not been reported as such, and mites were not isolated until a regulatory veterinarian examined the flock in March 1964. The flock was dipped in toxaphene on April 2 and April 13, 1964. The infected flock had not shown signs of scabies during previous area inspections in December 1963. The owner had purchased a ram from a local livestock auction market in September 1963. This ram had come from an Augusta County flock found negative on inspection in December 1963 and March and April 1964. Six ewes were purchased from the same market on an undetermined date in 1962. The owner insisted he bought them at that location. However, sales records to support his statement were not available at the market. There were no sales from this flock.

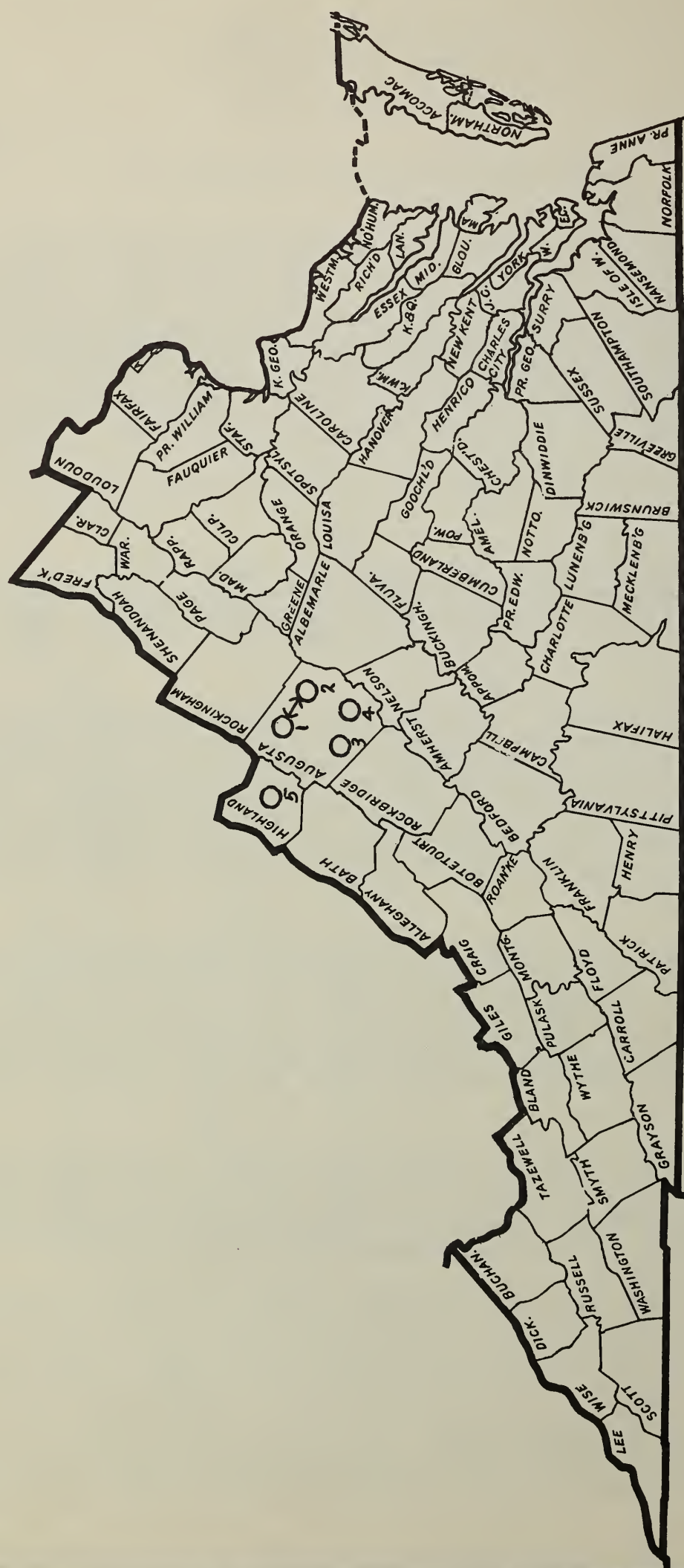
Infected Flock No. 5

An outbreak of psoroptic scabies was disclosed in Highland County, Virginia, on January 30, 1964, in a flock of 70 sheep that had been previously classed as suspicious in an area inspection during February 1963. At that time, no mites could be demonstrated and no further action was taken. The infected flock was dipped under supervision in toxaphene on January 31 and February 13, 1964. The only addition of sheep into the infected flock during recent years was the purchase of four "ragged" ewes in September 1962 from a dealer. The ewes remained in the flock for a short time and were traded back to the dealer who consigned them to immediate slaughter.

Two Highland County flocks that had received sheep from infected flock No. 5 through a local auction market in September 1963 were inspected in February 1964 and no signs of scabies could be detected. The involved sheep in the consignment had been dipped in toxaphene at the market and both flocks had received negative inspections in December 1963. A third Highland County flock owner had acquired a ram from infected flock No. 5 in a direct purchase during 1963. This flock was dipped as exposed on January 31 and February 13, 1964. No evidence of scabies could be detected. Virginia officials also considered as exposed the flock of a neighbor whose pasture adjoined that of infected flock No. 5. This flock was also dipped in toxaphene on March 13, and 24, 1964.

Disclosure of the five outbreaks in Virginia during FY 1964 resulted in amendments to Part 74, 9 CFR, redesignating Augusta and Highland Counties as Infected-Eradication Areas. The amendments were effective on January 23 and February 27, 1964, respectively. Following extensive sheep inspections and comprehensive epidemiological studies of the five outbreaks, both counties were returned to the list of Free Areas effective May 27, 1964.

SHEEP SCABIES OUTBREAKS FY 1964



KEY

○ - Infected Flock

Dates Infected Flocks Found

| | |
|---|----------|
| 1 | 12-18-63 |
| 2 | 1-22-64 |
| 3 | 2-18-64 |
| 4 | 3-23-64 |
| 5 | 1-30-64 |